



# 2022 MISSOURI STUDENT SURVEY



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# EXECUTIVE SUMMARY

In order to track trends in adolescent risk behaviors, the Missouri Department of Mental Health (DMH) and Department of Elementary and Secondary Education (DESE) have conducted the Missouri Student Survey (MSS) every even numbered year since 2000.

In 2022, a total of 96 schools (48 middle and 48 high) were selected to be part of the random sample. Of these, 35 (37%) schools with 1,678 students participated. Gender, grade (middle school, high school), race/ethnicity, and school size category (small, medium, large) were weighted to reflect statewide demographics.

In both Missouri and the United States, alcohol lifetime use was higher than the lifetime use of all other drugs, followed by cigarette and marijuana use. Continuing the trend from 2020, marijuana was more frequently reported as lifetime use than standard cigarettes, reflecting a decrease in standard cigarette use (lifetime marijuana has been relatively consistent over the last several administrations). Lifetime and 30-day use rates were higher in Missouri than nationally for alcohol, cigarettes, marijuana, and chewing tobacco. However, lifetime inhalant use was higher nationally than in Missouri.

Examining trends over time, e-cigarette use remains higher than 2016 although is at similar levels to 2018. Trends are also showing an increase in both past month alcohol and marijuana use. Chewing tobacco, which had increased in 2018, is now lower than 2018 levels. Usage of cigarettes, prescription drugs, and hookahs show a decrease from 2016.

About half of youth perceived e-cigarettes, alcohol, and over-the-counter drugs as either “very easy” or “sort of easy” to obtain. This is also reflected in a perceived lack of law enforcement around substance use in young people.

The majority of students felt like their friends would consider all types of substance use wrong and the great majority of them believed that their friends would not see them as “very cool” or “pretty cool” if they used. In addition, most reported that none of their friends used alcohol, cigarettes, marijuana, or other illegal drugs in the past year. Many youth (42.9%), however, did have at least one friend who used e-cigarettes while more than 1 in 3 (40.9%) had at least one friend who drank alcohol.

Alcohol usage (without a specified dosage) and marijuana were seen as the least risky substances. As alcohol dosage was specified, however, it was seen as more risky (marijuana perception did not change). Prescription drug misuse, synthetic drug use, and other illegal drug use was perceived as the most risky. Similar trends were reported for the perception of harm. However, it should be noted that the majority of students in every question said that it would be “very wrong” to use substances.

The majority of students reported that they had not engaged in physical bullying (86.0%), spread mean rumors or lies at school (85.8%), or embarrassed another student online or via text messaging (82.7%). However, almost half (43.9%) of the youth did report making fun of other people and 7.6% reported doing this 40 or more times in the past three months. The data does show the promising trend of

students who reported making fun of other people continuing to decrease over time (54.1% “1+ times” in 2016 to 43.9% in 2022).

Youth were asked six questions related to depression. Most students (72.3%) reported feeling grouchy or in a bad mood at least “sometimes”. Over half reported feeling sad (55.8%), changes in sleep (59.2%), or difficulty concentrating in school (61.9%) at least “sometimes”. Feeling hopeless was reported the least (34.7% “sometimes”, “often” or “always”). This pattern has remained consistent over time. Females consistently reported a statistically significant difference in experiencing more depressive symptoms than males.

About 20.6% of students reported attempting to harm themselves in a deliberate, but not suicidal, way. The most common method of self-harm was “cut, scratched, or hit myself on purpose”. Females (27.0%) were also much more likely than males to report self-harm (14.1%) ( $p < 0.05$ ).

More than 1 in 10 youth (11.0%) surveyed reported that they considered suicide in the last year and 8.4% made a plan to attempt suicide. Of those who attempted suicide, 17.7% had attempts that resulted in injury. The majority of those who attempted did so once (65.2%).

While more than 1 in 5 were unsure of where to get help and almost half didn’t feel like they had healthy coping mechanisms, the majority of students “agreed” or “strongly agreed” with the questions about knowing where to get help, feeling optimistic, and handling stress well.

# CHAPTER 1 – INTRODUCTION



In order to track trends in adolescent risk behaviors the Missouri Department of Mental Health (DMH) and Department of Elementary and Secondary Education (DESE) have conducted the Missouri Student Survey (MSS) every even numbered year since 2000. The first MSS, conducted by Research Triangle Institute on behalf of the DMH, was funded by the U.S. Department of Health and Human Service's Substance Abuse and Mental Health Services Administration (SAMHSA). Since then, the MSS has been funded by the DMH and analysis conducted by the Missouri Institute of Mental Health (MIMH). Beginning in 2016, MIMH coordinated the data collection as well. All public middle and high schools are asked to participate by surveying at least one classroom per grade. Beginning in 2018, private schools were also allowed to opt in, although participation from this group is low. This report describes the results of this survey.

The 2022 survey involves two levels of sampling. A random sample, selected for equal geographical distribution, was used to estimate prevalence rates for the entire state. A convenience sample was used to determine the county level data. Students who were part of the random sample were also automatically included in the convenience sample.

## Participants

**Statewide Random Sample:** A total of 96 schools (48 middle and 48 high) were selected to be part of the random sample. Of these, 35 (37%) schools with 1,678 students participated in the 2022 MSS. Gender, grade (middle school, high school), race/ethnicity, and school size category (small, medium, large) were weighted to reflect statewide demographics. All data in this report are from the random sample.

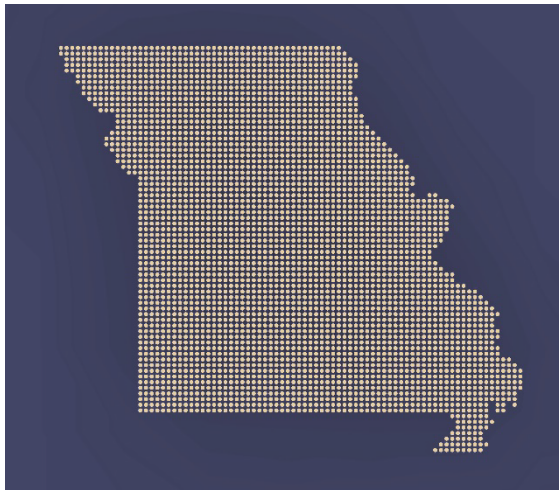
**County Level Convenience Sample (not included in this report):** The 2022 MSS was administered to students in grades 6-12. After data cleaning the sample size equaled 88,591 representing 90 counties (78%). Convenience samples were used in all MSS reports prior to 2016.

## Methods

Presented in this report are the results of the 2022 MSS, which assesses substance use and other health-risk behaviors among 6<sup>th</sup> through 12<sup>th</sup> graders attending public schools across the state. The numbers in this report reflect a random sample at the state level (47% response rate). Data were weighted to more accurately reflect the population demographics (See Appendix B).

Given the extremely large sample size of the weighted dataset, statistical analysis proved challenging. The statistical power of this dataset was so large that even the most minuscule change was regarded as

statically significant even though it may not be a meaningful difference. When this occurs, confidence intervals (CIs) are typically referred to instead; however, the weighting protocol used produces that CIs are very tight which means that this method also cannot be used. Given this, trends will be discussed, but there was some subjectivity in determining how much of a difference was “meaningful”.



Data in this report are  
drawn from the Statewide  
Random Sample. To  
obtain County-Level data,  
see  
<https://seow.dmh.mo.gov>



# CHAPTER 2 – ALCOHOL, TOBACCO, & OTHER DRUGS






## Trends in Lifetime & Past Month Substance Use

### Substance Use Comparisons with a National Sample

In both Missouri and the United States, alcohol lifetime use was higher than all other drugs, followed by both forms of cigarette and marijuana use. Continuing the trend from 2020, marijuana was more frequently reported as lifetime use than standard cigarettes, reflecting a decrease in standard cigarette use (lifetime marijuana has been relatively consistent over the last several administrations). Lifetime and 30-day use rates were higher in Missouri than nationally for alcohol, cigarettes, marijuana, and chewing tobacco. However, lifetime inhalant use was higher nationally than in Missouri.

National data were taken from the National Survey on Drug Use and Health for youth age 12-17 years (NSDUH, 2020). Some substances are blank because the survey does not collect this data.


Percentage of Substance Use in Missouri Users (6-12<sup>th</sup> grade) and the United States Users (12-17 years)

	Missouri (MSS)		United States (NSDUH)	
	Lifetime	30-day	Lifetime	30-day
Alcohol 	37.2%	14.9%	22.8%	8.2%
E-Cigarettes 	24.1%	11.0%	-	-
Marijuana 	15.3%	7.5%	12.4%	5.9%
Cigarettes 	10.7%	2.5%	7.2%	1.4%
Prescription Drugs 	2.5%	0.9%	-	-
Chewing Tobacco	4.4%	1.4%	2.4%	0.6%
Hookah	3.8%	1.1%	-	-
Over-the-Counter Meds	3.8%	0.7%	-	-
Inhalants	1.9%	0.8%	9.3%	0.4%
Synthetic Drugs	1.3%	1.0%	-	-
Hallucinogens	1.1%	-	2.3%	0.3%
Cocaine	0.3%	-	0.4%	0.0%
Club Drugs	0.2%	-	-	-
Methamphetamine	0.2%	-	0.2%	0.0%
Heroin	0.2%	-	-	-



E-cigarette data was not covered in the NSDUH, but was collected through the Youth Risk Behavioral Survey (YRBS, 2019) for high school youth only. The 2019 YRBS report indicated e-cigarette use among Missouri high school students was lower than the national average.

YRBS Percentage of Substance Users in Missouri and the United States, High School ONLY

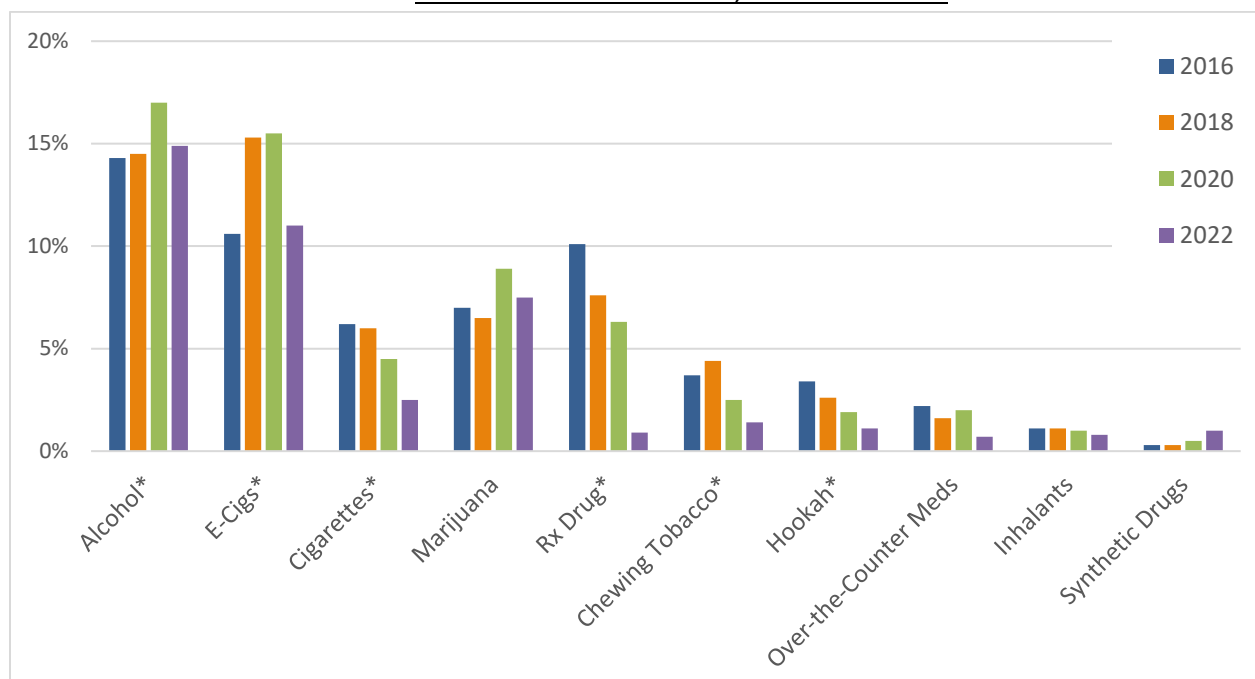
	Missouri (MSS)		United States (YRBS)	
	Lifetime	30-day	Lifetime	30-day
E-cigarettes 	31.2%	15.1%	50.1%	32.7%

## 2022 Substance Use Comparison over Time

The MSS statewide random sample has data for four time points (2016 to 2022). Statistical comparisons can be made over time and provide information on trends.

E-cigarettes remain higher than 2016 although are at similar levels to 2018. Trends are also showing an increase in both past month alcohol and marijuana use. Chewing tobacco, which had increased in 2018, is now lower than 2018 levels. Cigarettes, prescription drugs and hookahs all show a decrease from 2016.

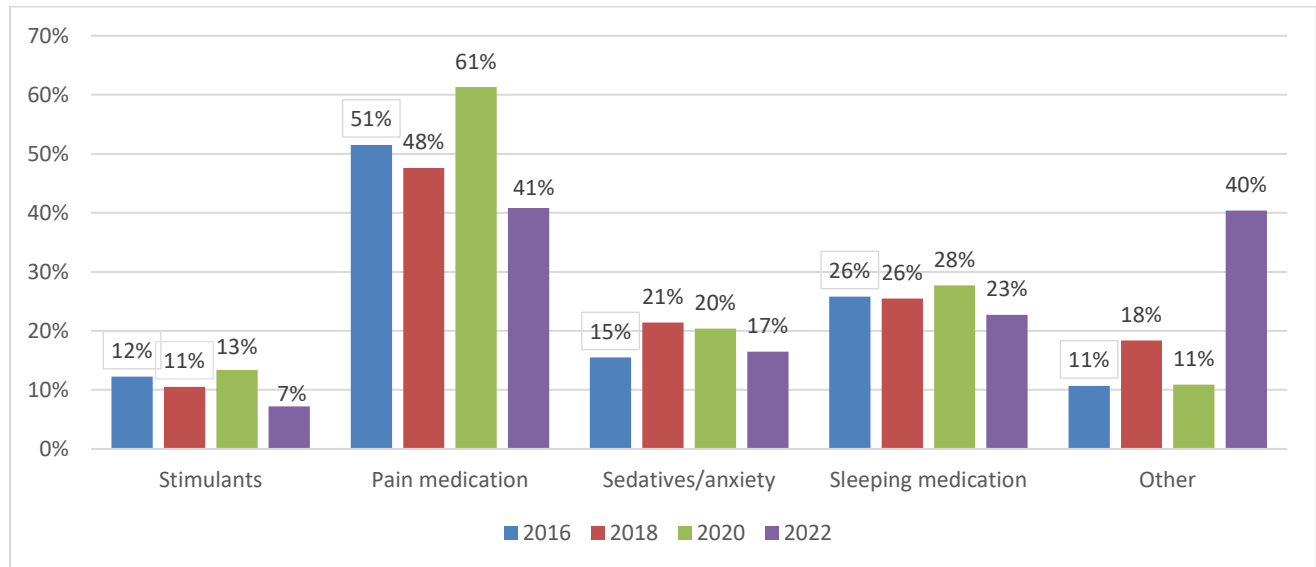
Past Month Substance Use, MSS 2016 - 2022



## Types of Prescription Drugs Misused over Time

When looking at the types of prescription drugs misused over time, overall substances are decreasing over time (with a spike in 2020). The exception to this is sedatives and anxiety which remains slightly higher than 2016 but lower than the last two cycles and “Other” which deserves further analysis in a future report.

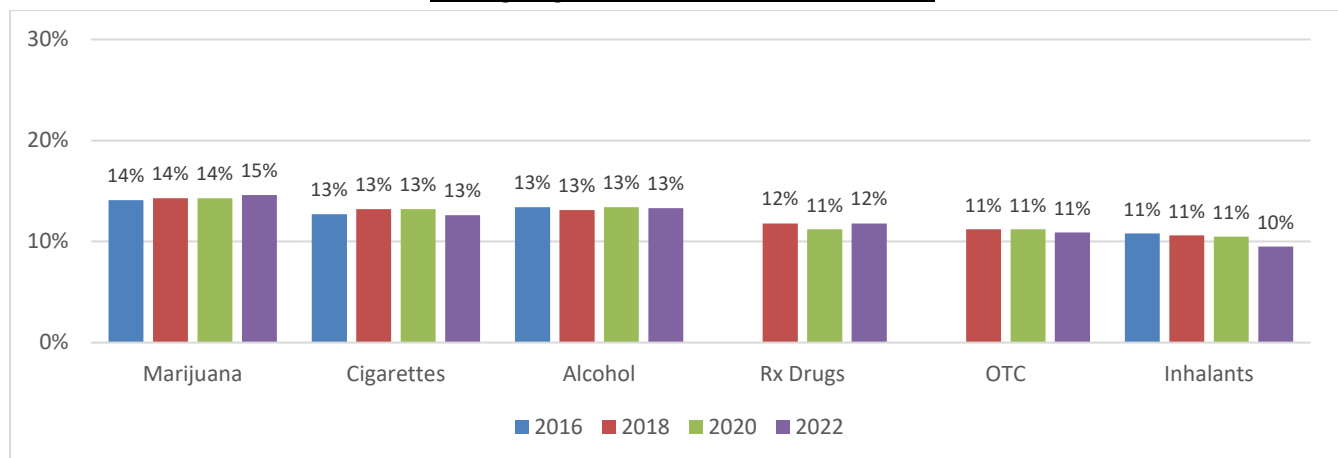
Types of Prescription Drugs Misused, MSS 2016 - 2022



## Age of First Substance Use over Time

Data for age of first use show that inhalants were used at an earlier age than other drugs, while first use of marijuana had the highest age. Age of first use trended upward for both marijuana and cigarettes. However, age of first use is trending younger for over the counter and inhalant use.

Average Age of First Use, MSS 2018 - 2022

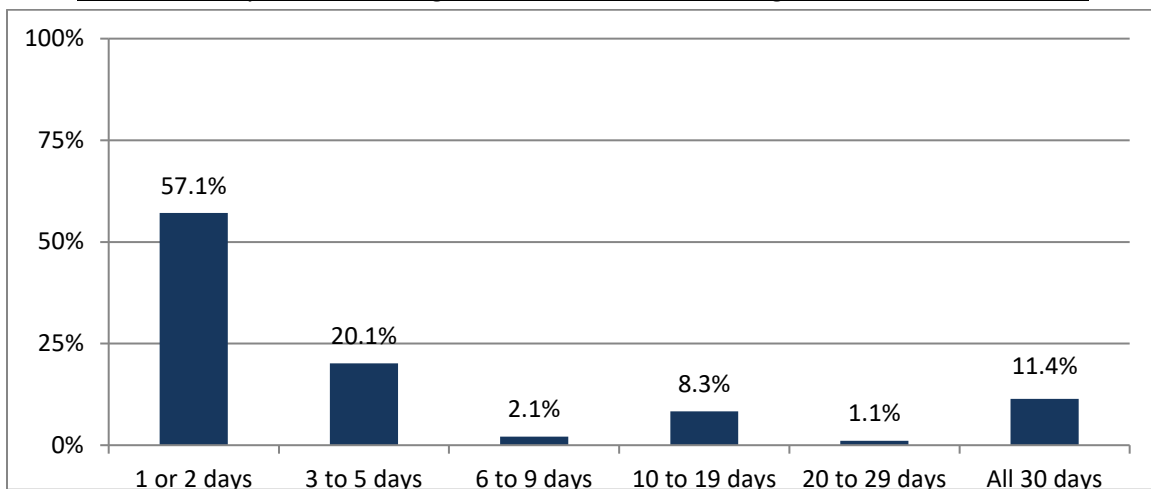


## Substance Use Extent & Circumstances

### **Tobacco**

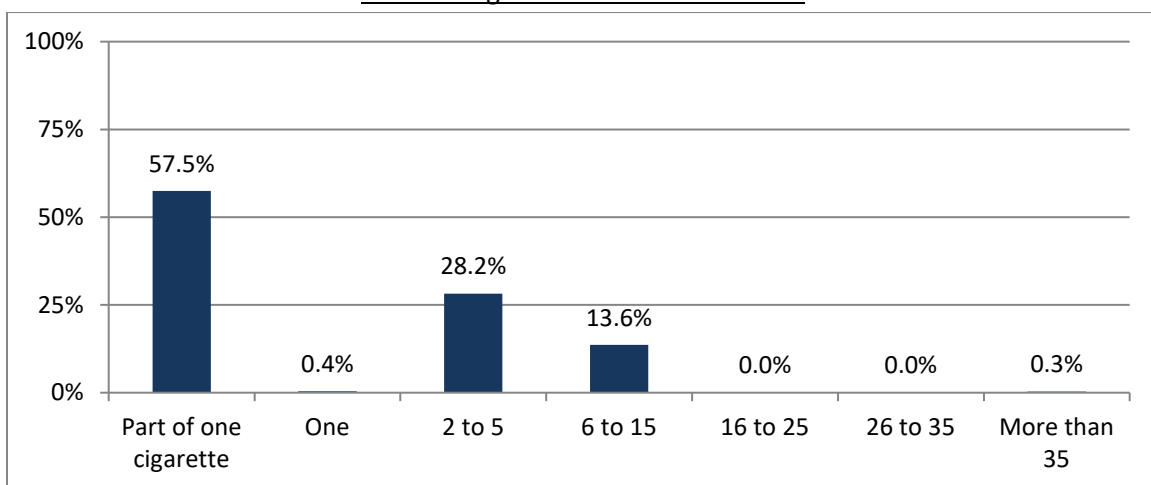
Among students who reported that they smoked standard cigarettes, most (57.1%) smoked only one or two days out of the month, followed by 3 to 5 days (20.1%), and then daily smoking (11.4%). This is a change from previous years in which daily smoking was the second highest category.

Number of Days of Use Among Youth Who Had Smoked Cigarettes in the Past Month



Among youth who smoked a cigarette in the 30 days prior to the survey administration, 80.8% tried to quit smoking at some point in their life; about half (46.9%) did so successfully. The majority (85.7%) of youth who smoked in the past 30 days reported smoking five or fewer cigarettes on the days that they did smoke. Very few (0.3%) reported smoking more than 15 cigarettes a day. This is a dramatic drop from previous 2020 (12.7%), although it's unknown how the use of e-cigarettes are impacting this number.

Average Number of Cigarettes Smoked per Day (on Days That Cigarettes Were Smoked) Among Youth Who Had Smoked Cigarettes in the Past Month



In another change from 2020, taking them without permission and buying them from a store is the way most students access their standard cigarettes. A friend, which was previously the top choice, has dropped to number three. As students could select multiple options, the total adds to more than 100%.

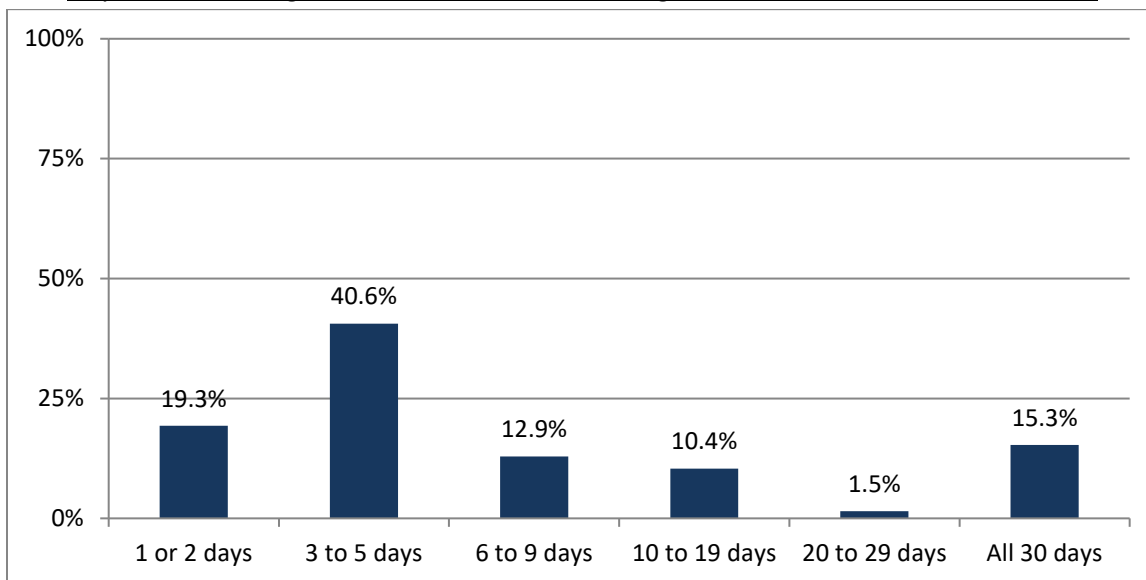
How Cigarettes were Accessed, of Those Who Reported Past Month Use

	Endorsed
<i>I take it without permission</i>	50.7%
<i>I buy them from the store</i>	24.0%
<i>A friend gives or sells it to me</i>	22.7%
<i>I buy it online</i>	6.9%
<i>I ask a stranger to buy them for me</i>	3.3%
<i>A family member gives or sells it to me</i>	2.7%
<i>Other</i>	12.4%

A little more than a 1 in 10 cigarette smokers (13.6%) had smoked on school property during the past 30 days; Approximately 8.9% of smokers reported smoking on school property 20 to 29 days of the past 30 days.

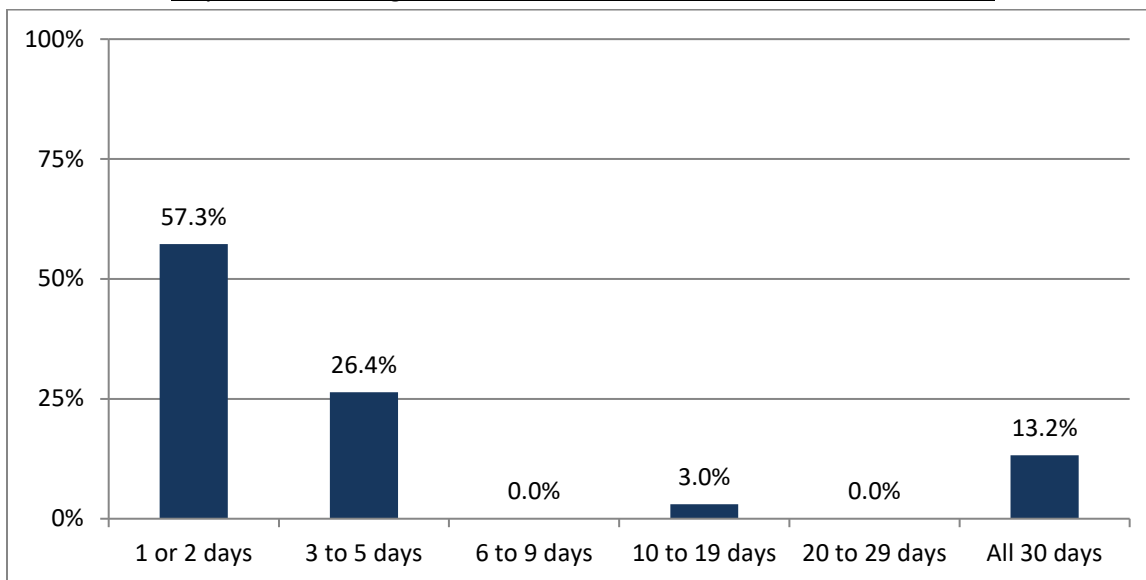
Of those who used of chewing tobacco in the past 30 days, the largest percentage of youth used chewing tobacco 1 or 2 days (19.3%) a month or three to five days (40.6%). Again, daily dropped to third.

Days of Use Among Youth Who Had Used Chewing Tobacco or Snuff in the Past Month



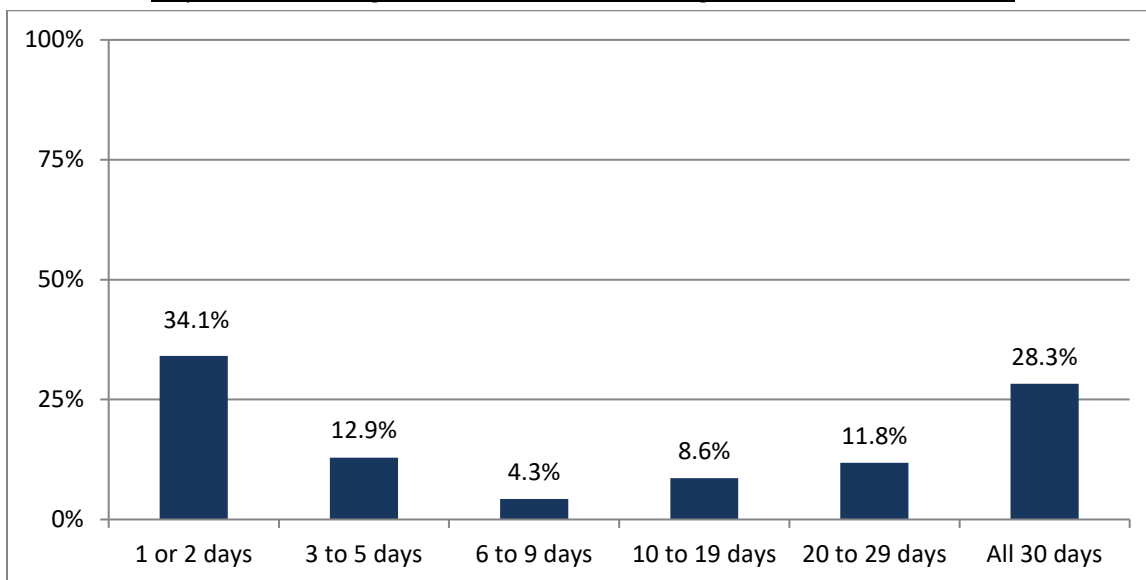
The majority of students who reported using a hookah only did it on an occasional basis. However, a little more than 1 in 10 reported using daily.

Days of Use Among Youth Who Had Used Hookahs in the Past Month



Youth who reported using e-cigarettes have a similar use pattern to the previous pattern standard cigarettes. The most students (34.1%) smoked only one or two days out of the month, followed by daily smoking (28.3%).

Days of Use Among Youth Who Had Used E-Cigarettes in the Past Month



Most youth who smoked e-cigarettes obtained them from a friend, followed by buying purchasing from a store.

How E-Cigarette Products were Accessed, of Those Who Reported Past Month Use<sup>1</sup>

	Endorsed
<i>A friend gives or sells it to me</i>	54.6%
<i>I buy them from the store</i>	22.1%
<i>A family member gives or sells it to me</i>	17.2%
<i>I take it without permission</i>	9.0%
<i>I ask a stranger to buy them for me</i>	4.2%
<i>I buy it online</i>	1.6%
<i>Other</i>	11.8%

E-cigarettes use liquids, although the content of these liquids may vary. The majority of them contain nicotine. Many students reported using nicotine (54.7%) and flavor only products (40.0%) in their e-cigarettes at least sometimes. More than 1 in 10 reported at least sometimes using marijuana in their e-cigarette.

Product Used in E-Cigarette, Mod, or Vape for Those Who Reported Using E-Cigarette in Their Lifetime

	Endorsed
<i>Nicotine</i>	54.7%
<i>Flavor only</i>	40.0%
<i>Marijuana</i>	16.2%
<i>Other</i>	5.6%

About one out of five current tobacco users (19.2%) reported using more than one form of tobacco. Of those who reported currently smoking standard cigarettes, 66.2% also reported current e-cigarette use, 24.9% reported current chew use, and 3.9% reported current hookah use. Of those who reported currently smoking e-cigarettes, 9.8% were also chew users and 4.2% were also hookah users.

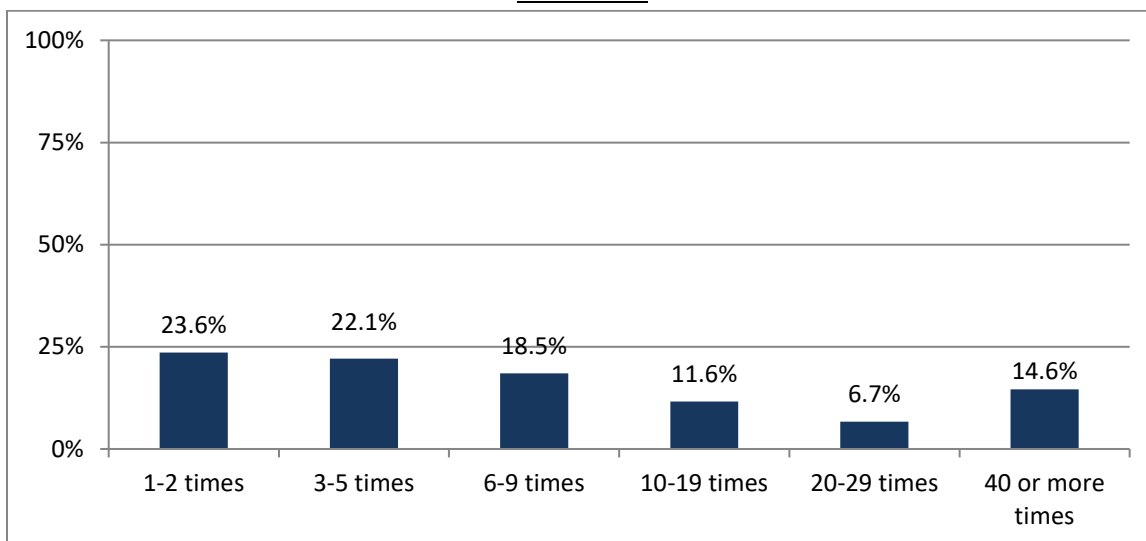
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<sup>1</sup> As students could select multiple options, tables on access and subcategories of substances can add to more than 100%

## Alcohol

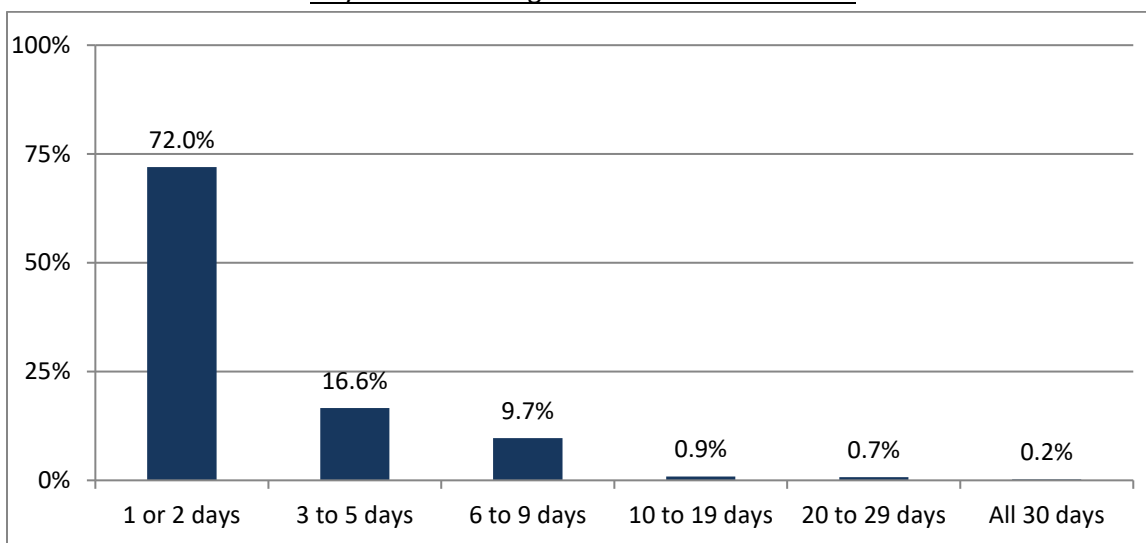
Of the students who reported having had at least one drink in their lifetime, about one-quarter (23.6%) only consumed alcohol on 1-2 occasions. While approximately 15% had consumed alcohol 40 or more times, this is a decrease from 2020. This excludes “when you only had a sip or two from a drink or if you drank alcohol only for religious purposes”.

Number of Times Youth Had at Least One Drink of Alcohol in Their Lifetime, Among Those Who Had a Drink at Least Once



Among those youth who reported drinking in the last 30 days, the majority (72.0%) drank on only 1 or 2 days. Among those youth, 5.5% reported drinking on school property at least once.

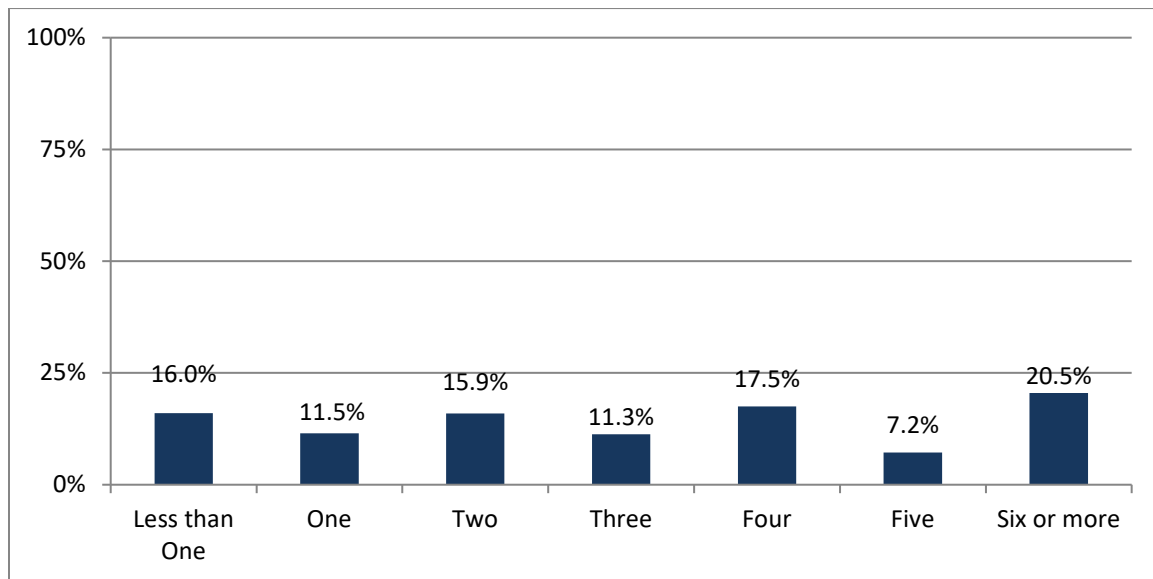
Days of Use Among Past Month Alcohol Users





27.7% of students who reported past month alcohol use also reported having five or more drinks (binge drinking) in the past month. Taken with the information presented below on the average number of drinks per occasion, this indicates that while most youth only drink 1-2 days a month, when they do drink many of them drink heavily.

Average Number of Drinks Consumed (on Days That Alcohol Was Used) Among Youth Who Consumed Alcohol in the Past Month



Overall, in the past 30 days, a small percentage (0.3%) of students 16 and older reported drinking while driving, compared to 5.5% at the national level (YRBS, 2019). Over fifteen percent (15.5%) of all students surveyed reported that they had ridden in a car with someone who had been drinking, which is similar to the national data (16.7%) (YRBS, 2019). However, for students who reported drinking in the past 30 days, 34.2% rode with someone who had been drinking and 2.5% reported drinking and driving. The number of students who reported drinking and driving or riding with someone who had been drinking has remained relatively stable between 2016 and 2020.

While friends remained the primary source to get alcohol, family members, and having taken it without permission were also common sources.

How Alcohol was Accessed, of those who reported Past Month Use

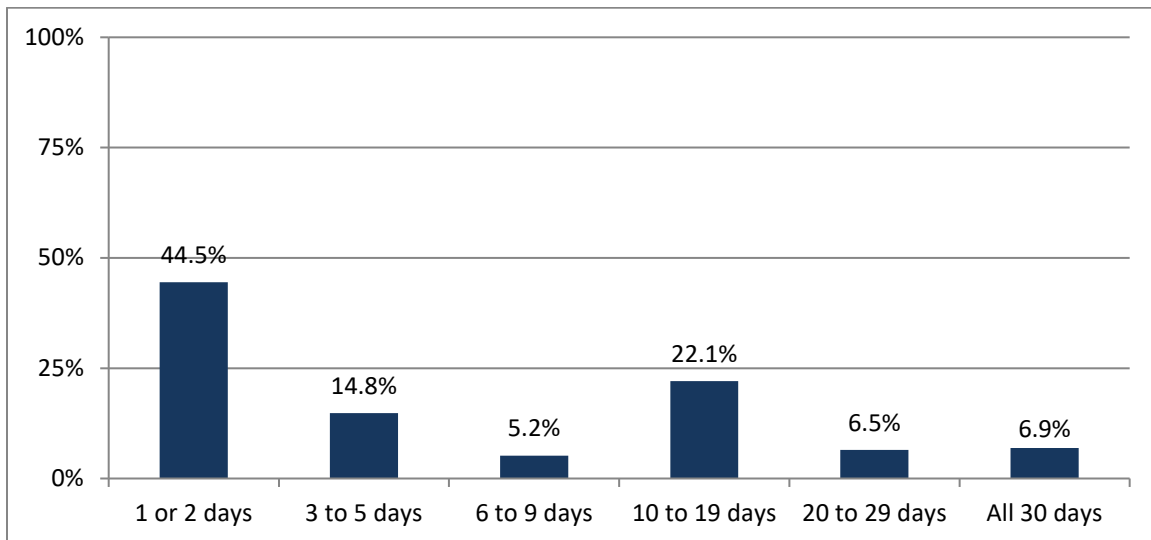
	Endorsed
<i>A friend gives or sells it to me</i>	57.6%
<i>A family member gives or sells it to me</i>	38.2%
<i>I take it without permission</i>	25.3%
<i>I buy them from the store</i>	6.8%
<i>I ask a stranger to buy it for me</i>	4.7%
<i>I buy it online</i>	0.1%
<i>Other</i>	6.5%

## Marijuana



Of youth who smoked marijuana in the past month, almost half (44.5%) youth reported smoking one or two days in the past month, while 6.9% reported daily use. This is a sharp decrease from 2020 when the daily users were 18.1% of the population.

Number of Days of Use Among Past Month Marijuana Smokers



About 1 in 6 (12.3%) past month users smoked marijuana had done so while on school property. This is much higher than the percentage who reported drinking alcohol on school property (5.5%) but lower than those who reported smoking cigarettes on school property (13.6%).

Most students reported smoking and/or vaping marijuana, although edibles and dabbing, etc. were also relatively common. Note that categories have changed slightly since 2018 to reflect new ways of using marijuana.

Methods of Using Marijuana

	Endorsed
<i>Smoke it (blunt, pipe, hookah, etc.)</i>	88.7%
<i>Vape it (dry plant, THC oil, extracts, etc.)</i>	64.8%
<i>Eat it (edibles)</i>	48.9%
<i>Dabbing / Wax / Hash Oil</i>	34.4%
<i>Other</i>	2.0%

The majority of students got their marijuana from a friend. They also obtained it from a dealer and family members.

How Marijuana was Accessed, of Those Who Reported Past Month Use

	Endorsed
<i>A friend gives or sells it to me</i>	57.2%
<i>I buy it from a dealer</i>	36.6%
<i>A family member gives or sells it to me</i>	27.2%
<i>I take it without permission</i>	10.9%
<i>A stranger gives or sells it to me</i>	5.6%
<i>I buy it online</i>	1.9%
<i>Other</i>	13.1%



## Prescription Drug Misuse

Among youth who misused prescription drugs at least once (9.4%), pain medication was the most commonly misused substance; not surprisingly, the number one reason given for misusing prescription drugs was to reduce and/or manage pain. Similarly, sleeping medication was the second most misused prescription drug and the second most common reason given was to help with sleep. These patterns are the exact same as those seen in the 2016 and 2018 surveys.

Overall, current prescription drug misuse has decreased since 2016. However, there was a significant decrease in pain medication. There was also an increase in students indicating “Other”.

### Type of Prescription Misused in the Past Year, of Those Who Reported Lifetime Misuse of Prescription Drugs

	Endorsed
<i>Pain medication</i>	40.8%
<i>Sleeping medication</i>	22.7%
<i>Sedatives / anxiety medication</i>	16.5%
<i>Stimulants</i>	7.2%
<i>Other</i>	40.4%

### Reasons for Use that were Important to Those Who Reported Lifetime Misuse of Prescription Drugs

	Endorsed
<i>To reduce and/or manage pain</i>	24.2%
<i>To help me sleep</i>	26.4%
<i>To help with stress</i>	19.1%
<i>To help with emotional pain</i>	7.6%
<i>To help me feel better or happier</i>	6.1%
<i>To increase my energy</i>	4.8%
<i>To have a good time</i>	3.2%
<i>Curiosity</i>	3.2%
<i>To help with weight loss</i>	0.9%
<i>To improve academic performance</i>	3.2%
<i>To fit in with friends</i>	0.4%

Prescription drugs were the only substance that students reported getting primarily from their family; all other substances were primarily obtained from a friend. The number of those youth who were getting it from a family member (43.1% in 2018 and 28.6% in 2020) and taking it without permission (10.2% in 2018 and 5.6% in 2020) has decreased, which may indicate that prescription drug disposal methods may be helping decrease the availability of prescription drugs. This should be interpreted cautiously because there are only 2 data points.

How Prescription was Accessed, of Those Who Reported Past Month Use






	<b>Endorsed</b>
<i>A family member gives or sells it to me</i>	53.6%
<i>A friend gives or sells it to me</i>	7.8%
<i>I take it without permission</i>	20.9%
<i>A stranger gives or sells it to me</i>	0.0%
<i>I buy it online</i>	0.0%
<i>Other</i>	13.8%

## Factors Associated with Adolescent Substance Use

### Substance Availability

About half of youth perceived e-cigarettes, alcohol, and over-the-counter drugs as either “very easy” or “sort of easy” to obtain. Marijuana was considered easier to get than prescription or synthetic drugs, with almost one third of students believing marijuana was easy to get. Illegal drugs were perceived as the most difficult to get, with a large majority (91.8%) reporting that they were “sort of hard” or “very hard” to get.

Youth Perception of Substance Availability




	Very Easy	Sort of Easy	Sort of Hard	Very Hard
Over-the-Counter Drugs	31.6%	19.5%	14.5%	34.4%
Alcohol 	25.5%	25.3%	16.5%	32.8%
E-Cigarettes 	25.3%	20.2%	15.9%	38.6%
Cigarettes 	15.7%	19.2%	22.8%	42.3%
Marijuana 	17.6%	16.3%	14.5%	51.6%
Prescription Drugs 	8.3%	11.6%	19.4%	60.7%
Synthetic Drugs	10.1%	10.8%	18.6%	60.6%
Other Illegal Drugs	2.2%	6.0%	16.4%	75.5%

### Law Enforcement

The perceived effectiveness of law enforcement around substance use was low. Most youth did not believe that the police would catch someone using cigarettes or alcohol in their neighborhood. This was fairly consistent across all drugs. While 58.3% of students in 2020 said that a police officer would catch someone using marijuana, the percent dropped to 36.5% in 2022.

Note the question was worded “Select No! if you really don’t agree with the sentence, no if you sort of disagree, yes if you sort of agree, and Yes! if you really agree with the sentence.”






Percentage of Youth Who Think the Police Would Catch Students Using Substances in Their Neighborhood

	No!	no	yes	Yes!
Cigarettes 	32.5%	42.8%	17.8%	6.9%
Alcohol 	32.6%	39.8%	19.0%	8.6%
Marijuana 	26.7%	36.8%	23.4%	13.2%

## Peer Substance Use and Perception of Substance Use






The majority of youth surveyed reported that none of their friends used alcohol, cigarettes, marijuana, or other illegal drugs in the past year. Many youth (42.9%), however, did have at least one friend who used e-cigarettes while more than 1 in 3 (40.9%) had at least one friend who drank alcohol.

Percentage of Youth Who Have Friends Who Use Substances

	0 friends	1 friend	2 friends	3 friends	4 or more friends
<i>E-Cigarettes</i> 	57.1%	13.6%	10.4%	2.9%	16.0%
<i>Alcohol</i> 	59.1%	9.2%	10.4%	5.0%	16.3%
<i>Marijuana</i> 	69.8%	9.1%	6.6%	3.2%	11.3%
<i>Cigarettes</i> 	82.4%	8.2%	3.4%	2.4%	3.5%
<i>Prescription Drugs</i> 	93.0%	3.9%	1.2%	0.3%	1.6%
<i>Other Illegal Drugs</i>	94.4%	2.8%	1.0%	0.3%	1.5%

The majority of students felt like their friends would consider all types of substance use wrong. While e-cigarettes was the least likely for students to be concerned about peer judgment, nearly 7 out of 10 still thought their friends would disapprove.

Youths' Perception of How Wrong their Friends consider Substance Use





	Not wrong at all	A little bit wrong	Wrong	Very wrong
<i>Prescription Drugs</i> 	5.3%	5.0%	20.3%	69.5%
<i>Smoke Cigarettes</i> 	9.0%	10.0%	23.5%	57.5%
<i>Used E-Cigarettes</i> 	17.2%	14.5%	22.2%	46.2%
<i>One or two drinks every day</i> 	9.9%	14.2%	27.8%	48.1%
<i>Marijuana</i> 	17.3%	10.9%	18.8%	52.9%





Similarly, while students may have friends who used substances, the great majority of them believed that their friends would not see them as “very cool” or “pretty cool” if they used. Standard cigarettes were seen as the least cool substance.








Percentage of Youth who Indicate Level of Coolness

	Very Cool	Pretty Cool	A Little Cool	Not at all Cool
Smoked Cigarettes 	2.3%	4.8%	14.6%	78.3%
Used E-Cigarettes 	5.8%	9.4%	22.0%	62.9%
Smoked Marijuana 	6.8%	10.6%	18.6%	64.0%
Drank Alcohol 	7.3%	12.7%	22.7%	57.2%

## Perceived Risk of Harm from Substances

Alcohol usage (without a specified dosage) and marijuana were seen as the least risky substances. As alcohol dosage was specified, however, it was seen as more risky. Prescription drug misuse, synthetic drug use, and other illegal drug use was perceived as the most risky.

Youths’ Perception of Risk of Harm from Using Substances









	No Risk at All	Slight Risk	Moderate Risk	Great Risk
Any alcohol use 	10.9%	33.5%	33.4%	22.2%
Marijuana once or twice a week 	19.0%	20.1%	19.2%	41.7%
E-Cigarettes 	10.2%	23.1%	31.6%	35.2%
One or two drinks nearly every day 	12.4%	19.2%	33.6%	34.9%
Five or more drinks once or twice a week 	9.1%	13.1%	28.6%	49.1%
Over the Counter Drugs	8.0%	13.7%	30.5%	47.8%
Cigarettes, 1+ packs per day 	10.3%	7.6%	21.1%	60.9%
Synthetic Drugs	8.0%	8.0%	20.5%	63.5%
Prescription Drugs 	5.9%	4.9%	21.9%	67.3%
Other Illegal Drugs	5.1%	4.9%	10.8%	79.2%

## Morality of Substance Use

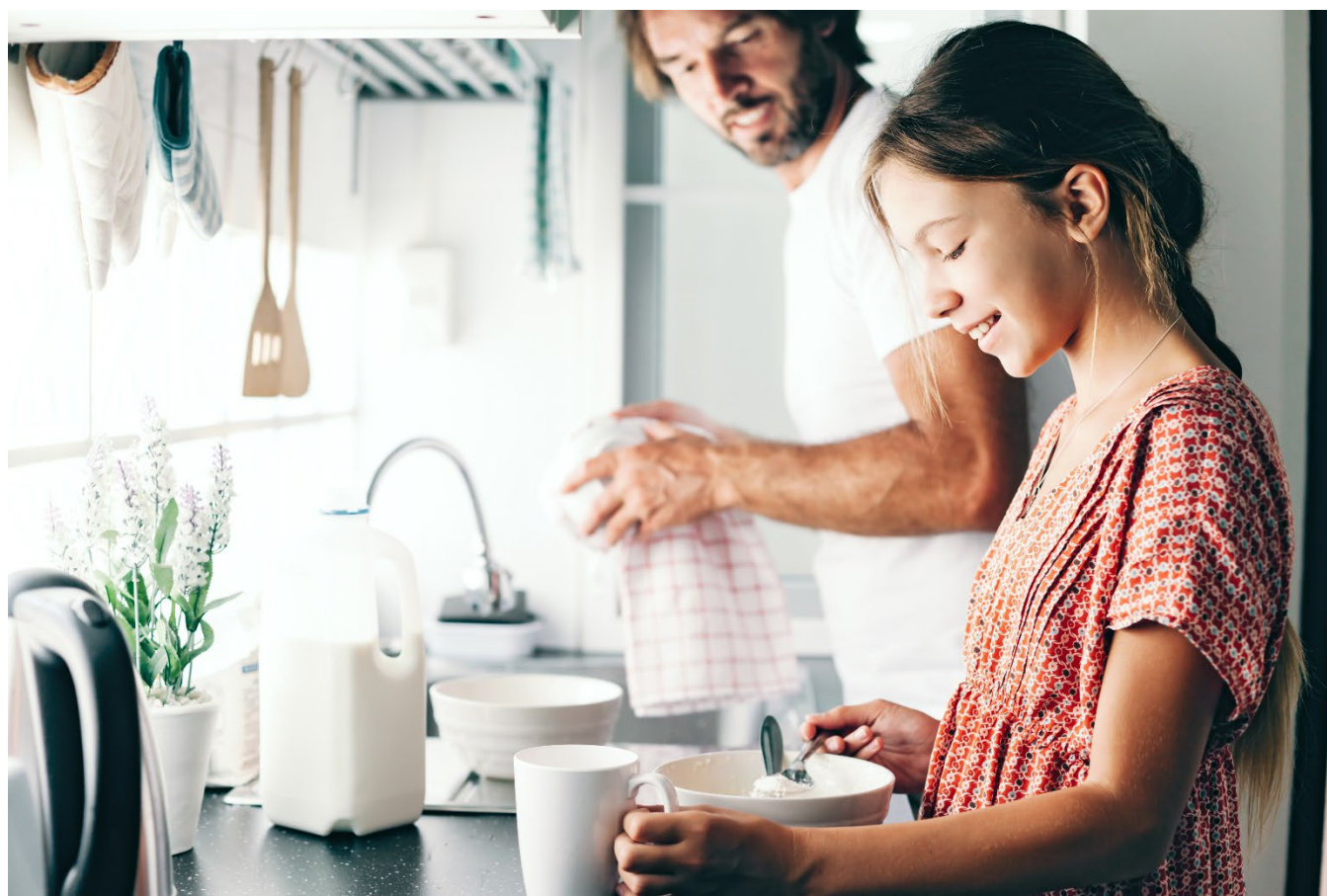
Similar to responses for the perception of harm, alcohol use was most accepted substance. However, it should be noted that the majority of students in every question said that it would be “very wrong” to use substances. When combined with “wrong”, over 7 out of 10 students disagreed with substance use in all categories except alcohol. Almost all disagreed with the use of over the counter, prescription, and other illegal drugs.

More youth perceived alcohol as “very wrong” when it was used every day or heavily once or twice a week. However, for marijuana, the frequency of use did not affect how wrong it was perceived.

Youths’ Perception of Wrongfulness of Substance Use

	Not wrong at all	A little bit wrong	Wrong	Very wrong
Any type of alcohol 	9.6%	23.6%	20.7%	46.1%
Any use of marijuana 	8.7%	12.3%	14.3%	64.7%
E-Cigarettes 	5.3%	13.9%	21.3%	59.5%
Once or twice a week, use marijuana 	8.3%	9.8%	14.1%	67.7%
Five or more drinks once or twice a week 	2.9%	8.8%	15.8%	72.5%
One or two drinks every day 	3.3%	8.0%	21.3%	67.5%
Cigarettes 	2.3%	7.2%	20.0%	70.5%
Over the Counter Drugs	2.4%	4.0%	14.0%	79.7%
Prescription Drugs 	1.7%	2.5%	10.7%	85.2%
Other Illegal Drugs	1.6%	2.1%	7.4%	88.9%

Trends over time with the Risk and Protective factors are being analyzed. The report will be available at <https://dmh.mo.gov/alcohol-drug/missouri-behavioral-health-epidemiology-workgroup> in Winter 2022.



# CHAPTER 3 – PROBLEM BEHAVIORS

This chapter contains information on self-reported problem behaviors, including emotional and physical bullying, physical aggression, and experience with weapons. It also includes information on factors associated with adolescent problem behaviors, such as rebellious and defiant attitudes, weapon availability, perceived law enforcement response to weapon possession, peer weapon use, and problem behavior and attitudes among the family.

## Bullying

### **Bullying Behaviors**

Youth were asked to report the number of times in the past three months they bullied others or were bullied by another student. Bullying behaviors include physical bullying (whether a student had hit, shoved or pushed another student and were not “just fooling around”) and emotional bullying (spreading mean rumors or lies, making fun of others, and embarrassing or hurting another student through the use of a cell phone or the internet).

The majority of students reported that they had not engaged in physical bullying (86.0%), spread mean rumors or lies at school (85.8%), or embarrassed another student online or via text messaging (82.7%). However, almost half (43.9%) of the youth did report making fun of other people and 7.6% reported doing this 40 or more times in the past three months. However, students who reported making fun of other people continues to decrease over time (54.1% “1+ times” in 2016, 51.1% in 2018, 47.2% in 2020 and 43.9% in 2022).

Frequency of Bullying Behaviors in the Past 3 Months

	<b>Never</b>	<b>1-2</b>	<b>3-5</b>	<b>6-9</b>	<b>10-19</b>	<b>20-29</b>	<b>30-39</b>	<b>40 +</b>
<i>Hit, shoved or pushed another student and were not just fooling around</i>	86.0%	8.7%	2.3%	1.1%	0.8%	0.0%	0.1%	0.9%
<i>Spread mean rumors or lies about others at school</i>	85.8%	9.2%	3.6%	0.5%	0.1%	0.3%	0.1%	0.4%
<i>Made fun of other people</i>	56.1%	23.0%	6.2%	3.1%	2.4%	0.9%	0.7%	7.6%
<i>Posted something online or sent a text that might embarrass or hurt another student</i>	82.7%	10.4%	3.7%	0.6%	0.7%	0.4%	0.2%	1.2%

## Peer Victimization

Students were asked if they were bullied on school property in the past year. Bullying was defined as “when one or more students tease, threaten, spread rumors about, hit, shove, or hurt another student over and over again. It is not bullying when two students of about the same strength or power argue, fight, or tease each other in a friendly way”.

Frequency of Peer Victimization in the Past 3 Months

	Never	1-2	3-5	6-9	10-19	20-29	30-39	40 +
<i>Been hit, shoved or pushed by another student who was not just fooling around</i>	80.4%	10.7%	4.3%	1.9%	0.8%	0.5%	0.5%	0.9%
<i>Mean rumors or lies spread about you at school</i>	58.3%	22.3%	11.8%	3.2%	1.4%	0.7%	0.1%	2.1%
<i>Made fun of you</i>	43.9%	24.1%	12.5%	6.3%	3.4%	1.7%	1.3%	7.0%
<i>Had something embarrassing or hurtful posted online or in a text by another student</i>	75.6%	13.5%	5.5%	2.7%	0.9%	0.5%	0.3%	1.0%

## Physical Aggression & Experience with Weapons

More than 4 out of 5 students reported not engaging in a physical fight in the last year. Almost all youth reported they were not injured in a physical fight or threatened with a weapon while on school property. For those who did engage in fighting, the majority reported that they had only fought once in the past year.

Frequency of Fighting and Being Threatened/Injured with a Weapon in the Past 12 months

	0 times	1 times	2 or 3 times	4 or 5 times	6 or 7 times	8 or 9 times	10 or 11 times	12 or more
<i>In a physical fight</i>	82.1%	10.0%	5.5%	1.1%	0.3%	0.0%	0.1%	0.9%
<i>Injured in a physical fight (required medical treatment)</i>	98.3%	1.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.2%
<i>Threatened/Injured with a weapon on school property</i>	92.1%	4.2%	2.2%	0.7%	0.1%	0.0%	0.2%	0.5%

## Rebellious & Defiant Attitudes

The large majority of youth did not report rebellious and defiant attitudes. Of the rebellious behaviors, cheating was seen as the most acceptable, with almost 1 out of 3 students that “agreed” or “strongly agreed” with that statement.

Extent of Rebellious and Defiant Attitudes

	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<i>I ignore rules that get in my way.</i>	38.8%	42.3%	16.3%	2.5%
<i>I do the opposite of what people tell me, just to get them mad.</i>	48.2%	37.8%	11.9%	2.2%
<i>I think sometimes it is okay to cheat at school.</i>	40.4%	28.1%	24.7%	6.8%

## Weapons - Availability, Law Enforcement, and Peer Behavior

Almost half (47.8%) of all youth did not believe that a youth carrying a gun in their neighborhood would be caught by the police.

Extent to Which Youth Think the Police Would Catch a Kid Carrying a Gun in Their Neighborhood

	<b>No!</b>	<b>no</b>	<b>yes</b>	<b>Yes!</b>
<i>If a kid was found carrying a gun in your neighborhood, or in the area around where you live, would he or she be caught by police?</i>	20.0%	27.8%	29.4%	22.7%

While the vast majority of youth did not have a friend who carried a gun (not including use for hunting or sport), over 10% reported at least one friend had carried a gun in the past year.

Number of Friends Who Carried a Gun in the Past Year (12 months)

	<b>0 friends</b>	<b>1 friend</b>	<b>2 friends</b>	<b>3 friends</b>	<b>4 or more friends</b>
<i>How many friends you feel closest to have carried a gun (not including use of a gun for hunting or sport)?</i>	88.7%	5.5%	1.9%	0.5%	3.4%



## CHAPTER 4 – MENTAL HEALTH



### Depression

Youth were asked six questions related to depression. Most students (72.3%) reported feeling grouchy or in a bad mood at least “sometimes”. Over half reported feeling sad (55.8%), changes in sleep (59.2%), or difficulty concentrating in school (61.9%) at least “sometimes”. Feeling hopeless was reported the least (34.7% “sometimes”, “often” or “always”). This pattern has remained consistent over time.

Extent of Depressive Symptoms in the Past Month (30 Days)

	Never	Not very often	Sometimes	Often	Always
<i>Were you very sad?</i>	20.5%	23.6%	28.1%	21.6%	6.1%
<i>Were you grouchy or irritable, or in a bad mood?</i>	11.2%	16.6%	36.8%	27.9%	7.6%
<i>Did you feel hopeless about the future?</i>	42.2%	23.1%	19.2%	7.9%	7.6%
<i>Did you feel like not eating or eating more than usual?</i>	38.1%	15.6%	22.1%	13.0%	11.3%
<i>Did you sleep a lot more or a lot less than usual?</i>	23.7%	17.0%	21.6%	20.4%	17.2%
<i>Did you have difficulty concentrating on your school work?</i>	18.6%	19.5%	24.5%	21.0%	16.4%

Females consistently reported a statistically significant difference in experiencing more depressive symptoms than males.

Depressive Symptoms in the Past Month (30 Days) by Gender (Often & Always)

	Male	Female
<i>Were you sad?</i>	16.5%	39.1%
<i>Were you grouchy or irritable, or in a bad mood?</i>	23.7%	47.4%
<i>Did you feel hopeless about the future?</i>	11.5%	19.5%
<i>Did you feel like not eating or eating more than usual?</i>	14.8%	33.8%
<i>Did you sleep a lot more or a lot less than usual?</i>	27.5%	47.9%
<i>Did you have difficulty focusing on your school work?</i>	31.3%	43.6%

## Self-Harm, Suicidal Ideation & Attempts

About 20.6% of students reported attempting to harm themselves in a deliberate, but not suicidal, way. The most common method of self-harm was “cut, scratched, or hit myself on purpose”. Females (27.0%) were much more likely than males to report self-harm (14.1%) ( $p < 0.05$ ).

Percent of Students Reporting Types of Self-Harm

	Male	Female	Overall
<i>Cut, scratched or hit myself on purpose to hurt myself</i>	55.9%	87.4%	76.5%
<i>Punched a hard object (like a wall or door)</i>	74.7%	45.5%	55.6%
<i>Pulled my hair or eyelashes</i>	26.1%	38.0%	33.9%
<i>Burned myself</i>	21.0%	18.9%	19.6%
<i>Used drugs or alcohol to hurt myself</i>	4.3%	15.9%	11.9%
<i>Swallowed more medicine than a doctor told me to take to hurt myself</i>	3.9%	18.1%	13.2%
<i>Swallowed something on purpose that was not food, drink or medicine in order to hurt myself</i>	5.6%	2.6%	3.6%
<i>Other</i>	11.3%	16.1%	14.4%



More than 1 in 10 youth (11.0%) surveyed reported that they considered suicide in the last year and 8.4% made a plan to attempt suicide.

Of those who attempted suicide, 17.7% had attempts that resulted in injury. The majority of those who attempted did so only once (65.2%).

Number of Suicide Attempts in the Past Year (12 Months)

	<b>0 times</b>	<b>1 time</b>	<b>2 or 3 times</b>	<b>4 or 5 times</b>	<b>6 or more times</b>
<i>How many times did you actually attempt suicide?</i>	95.7%	2.8%	1.3%	0.1%	0.1%

The YRBS (2019) was the national comparison for high school students only and Missouri numbers were lower than the national numbers across all questions.

Percent of Students Reporting Suicidal Behavior – High School ONLY

	<b>2022 MSS</b>	<b>2019 YRBS</b>
<i>Seriously Considered</i>	11.7%	18.8%
<i>Made a Plan</i>	8.4%	15.7%
<i>Attempted</i>	3.7%	8.9%
<i>Attempted Resulting in Injury</i>	0.8%	2.5%

## Resiliency

The majority of students “agreed” or “strongly agreed” with the questions about knowing where to get help, feeling optimistic, and handling stress well. However, more than 1 in 5 were unsure of where to get help and almost half didn’t feel like they had healthy coping mechanisms.

Resiliency Factors

	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<i>I know where to go in my community to get help.</i>	13.9%	17.4%	47.4%	21.3%
<i>I feel optimistic about my future.</i>	10.5%	15.4%	46.5%	27.5%
<i>I feel that I handle stress in a healthy way.</i>	21.0%	26.1%	39.0%	13.8%

# CHAPTER 5- EDUCATIONAL ENVIRONMENT

## Perceptions & Attitudes toward School

The majority of youth agreed that students of all races and ethnicities were treated fairly, that rules were enforced fairly, and that teachers noticed when the student was doing a good job. However, only 4 in 10 students say the school notified the student's family when they are doing a good job.

The percentage of students that "agreed" or "strongly agreed" that rules were enforced fairly decreased over time with a slight improvement in the current year (78.5% in 2016, 65.6% in 2018, 62.0% in 2020 and 63.9% in 2022).

Perceptions and Attitudes Toward School by Youth

	Strongly disagree	Disagree	Agree	Strongly Agree
<i>My teacher(s) notice(s) when I am doing a good job and let me know about it.</i>	4.6%	17.9%	64.2%	13.3%
<i>The school lets my parents know when I have done something well.</i>	17.6%	41.8%	31.7%	8.9%
<i>In my school, rules are enforced fairly.</i>	10.3%	25.8%	50.6%	13.3%
<i>In my school, students of all races and ethnic groups are treated equally.</i>	4.4%	12.6%	46.7%	36.2%



## School Performance

Almost all youth surveyed reported they were making at least passing grades, with almost half reporting having received mostly A's.

### Average Grades Last School Year

	Mostly F's	Mostly D's	Mostly C's	Mostly B's	Mostly A's
<i>What were your average grades?</i>	2.0%	2.9%	15.4%	31.0%	48.7%

Only 3.8% of students reported being suspended from school in the past 3 months.

### Number of Times Youth were Suspended from School in the Past Three Months

	Never	1-2	3-5	6-9	10-19	20-29	30-39	40 +
<i>Been suspended from school</i>	96.2%	3.3%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%

Approximately a third (33.8%) of students reported skipping at least one day of school in the past month. Of those students, the majority reported skipping only 1 or 2 days.

### Number of Days Youth Skipped or Cut School in the Past Month

	0 days	1 or 2 days	3 to 5 days	6 to 9 days	10 + days
<i>How many whole days have you missed school because you skipped or cut?</i>	66.2%	23.2%	8.9%	1.1%	0.6%

The majority of students did not report missing school due to feeling unsafe, which was slightly less than the national survey (High school students only: 9.9% MSS, 2022 compared to 8.7%, YRBS, 2019). However, 10.7% of all students “disagreed” or “strongly disagreed” that they felt safe at school.

### Number of Days Youth Skipped Due to Feeling Unsafe in the Past Month

	0 days	1 day	2 to 3 days	4 to 5 days	6+ days
<i>How many whole days have you missed school because you felt you would be unsafe at school or on your way to or from school?</i>	89.8%	5.2%	3.2%	1.2%	0.6%

### Perceptions of School Safety in the Past Three Months

	Strongly disagree	Disagree	Agree	Strongly Agree
<i>I feel safe at school</i>	2.3%	8.4%	68.1%	21.2%

# Appendix A – Survey Wording 2020

Comparison tables from 2006 to 2020 and copies of the surveys are available at <https://dmh.mo.gov/alcohol-drug/missouri-behavioral-health-epidemiology-workgroup>

## INTRODUCTION

Thank you for agreeing to participate in this study. The following questions are about your thoughts and feelings on a number of subjects about which we would like to know your opinions. Completing this survey is completely voluntary, which means you can stop at any time and you don't have to answer any questions that you don't want to. There are no right or wrong answers and everything you say is completely anonymous. That means that no one will ever know your individual responses. Please answer the survey as thoughtfully and honestly as possible. Thank you very much for being an important part of this project!

- Please answer all of the questions by marking one of the answer spaces.
- Select the answer that comes closest to how you feel.
- If you are not sure what a question means, please ask the survey administrator to explain.
- If any of the questions make you uncomfortable, you don't have to answer them; just leave them blank.

Classrooms have been assigned an ID number. This does not identify you in any way; your answers are still anonymous.

Q30. After you have read this page, to begin the survey, please enter the code for your school here (your teacher will tell you what it is):

Q116. To help us with our sorting, please enter the first initial of the last name of your teacher here. So if you are in Mr. Smith's class, you would type an S. If you are in Ms. Depue's class, you would type a D. If you have a substitute teacher today, please use the initial of your regular teacher.

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**Q1 First, we'd like to know a little about you.**

---

Q2 How old are you?

- ☐ 10 or younger (1)
- ☐ 11 (2)
- ☐ 12 (3)
- ☐ 13 (4)
- ☐ 14 (5)
- ☐ 15 (6)
- ☐ 16 (7)
- ☐ 17 (8)
- ☐ 18 (9)
- ☐ 19 or older (10)

Q3 What grade are you in?

- ☐ 6th (1)
  - ☐ 7th (2)
  - ☐ 8th (3)
  - ☐ 9th (4)
  - ☐ 10th (5)
  - ☐ 11th (6)
  - ☐ 12th (7)
- 

Q4 Are you male or female?

- ☐ Male (1)
  - ☐ Female (2)
- 

Q5 Are you Hispanic or Latino?

- ☐ Yes, I am Hispanic or Latino (1)
  - ☐ No, I am not Hispanic or Latino (2)
-

Q6 Which of the following best describes you? (check all that apply)

- ☐ African American or Black (1)
  - ☐ American Indian or Alaskan Native (2)
  - ☐ Asian (3)
  - ☐ Native Hawaiian or other Pacific Islander (4)
  - ☐ White (5)
  - ☐ Not listed here (please specify) (6) \_\_\_\_\_
- 

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Q7 What is the language you speak most often at home?

- ☐ English (1)
  - ☐ Spanish (2)
  - ☐ Other (please specify) (3) \_\_\_\_\_
- 

Q8 How much education does your father have?

- ☐ Did not finish High School (1)
  - ☐ Some education after High School (2)
  - ☐ Not Sure (3)
  - ☐ Graduated from High School (4)
  - ☐ Graduated from College (5)
- 

Q9 How much education does your mother have?

- ☐ Did not finish High School (1)
- ☐ Some education after High School (2)
- ☐ Not Sure (3)
- ☐ Graduated from High School (4)
- ☐ Graduated from College (5)

---

Q10 Have either of your parents served in the military (Army, Navy, Marines, Air Force, National Guard, or Reserves)?

- ☐ No (1)
- ☐ Yes (2)
- ☐ I'm not sure / don't know (6)

Display This Question:

If Have either of your parents served in the military (Army, Navy, Marines, Air Force, National Guar... = Yes

Q167 You said at least one of your parents served in the military. What is their status? (check all that apply)

- ☐ My mother is CURRENTLY in the military (2)
  - ☐ My mother WAS in the military but is now a veteran (3)
  - ☐ My father is CURRENTLY in the military (4)
  - ☐ My father WAS in the military but is now a veteran (5)
  - ☐ I'm not sure / don't know (6)
- 

Q11 Do you have your own cell phone?

- ☐ No (1)
  - ☐ Yes but I do not use it to access the internet (2)
  - ☐ Yes and I use it to access the internet (3)
- 

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**Q15 Your School**

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Q16 What were your average grades last school year?

- ☐ Mostly A's (1)
  - ☐ Mostly B's (2)
  - ☐ Mostly C's (3)
  - ☐ Mostly D's (4)
  - ☐ Mostly F's (5)
- 

Q17 During the past 30 days, how many whole days have you missed school because you skipped or cut?

- ☐ 0 days (1)
  - ☐ 1 or 2 days (2)
  - ☐ 3 to 5 days (3)
  - ☐ 6 to 9 days (4)
  - ☐ 10 or more days (5)
- 

Q18 During the past 30 days, on how many days did you not go to school because you felt you would be unsafe at school or on your way to or from school?

- ☐ 0 days (1)
  - ☐ 1 day (2)
  - ☐ 2 or 3 days (3)
  - ☐ 4 or 5 days (4)
  - ☐ 6 or more days (5)
- 

Q19 I feel safe at school.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Agree (3)
- ☐ Strongly Agree (4)

---

Q183 Drug Prevention Programs teach you about the harmful effects of drug use, teach you how to say no to drugs, and encourage healthy activities instead. These programs are taught by teachers , school counselors, peer leaders, social workers, etc. in a classroom or even after school.

Have you ever been a part of drug prevention program?

- ☐ No (1)
- ☐ Yes (what did you learn?) (2) \_\_\_\_\_

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Q20 How many times in the past 3 months have you been suspended from school?

- ☐ Never (1)
- ☐ 1-2 (2)
- ☐ 3-5 (3)
- ☐ 6-9 (4)
- ☐ 10-19 (5)
- ☐ 20-29 (6)
- ☐ 30-39 (7)
- ☐ 40 or more (8)

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Q21 The following sentences ask about your feelings about school. Please answer strongly disagree if you really don't agree with the sentence, disagree if you sort of disagree, agree if you sort of agree, and strongly agree if you really agree with the sentence

	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
My teacher(s) notice(s) when I am doing a good job and let me know about it. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The school lets my parents know when I have done something well. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rules are enforced fairly. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students of all races and ethnic groups are treated equally. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q27

### Your Friends

During the past year (12 months), how many of the friends you feel closest to you have

	0 friends (1)	1 friend (2)	2 friends (3)	3 friends (4)	4 or more friends (5)
smoked cigarettes? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used a vape or e-cigarette? (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
drank any type of alcohol? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
smoked marijuana (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used marijuana (pot, weed, dab, wax, edible)? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used prescription drugs that were not prescribed to them? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used any other illegal drugs such as cocaine, LSD (acid), methamphetamine (meth.), or club drugs (molly, ecstasy, roofies)? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
carried a gun (not including use of a gun for hunting or sport)? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q28 How wrong do your friends feel it would be for you to

	Not wrong at all (1)	A little bit wrong (2)	Wrong (3)	Very wrong (4)
have one or two drinks of an alcoholic beverage nearly every day? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
smoke tobacco? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use a vape or e-cig? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
smoke marijuana (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use marijuana (pot, weed, dab, wax, edible)? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use prescription drugs not prescribed to you? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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### Q30 Your Neighborhood

Please answer No! if you really don't agree with the sentence, no if you sort of disagree, yes if you sort of agree, and Yes! if you really agree with the sentence.

	No! (1)	no (2)	yes (3)	Yes! (4)
If a kid smoked cigarettes in your neighborhood, or the area around where you live, would he or she be caught by the police? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a kid drank some beer, wine, or hard liquor (for example, vodka, whiskey, or gin) in your neighborhood, or the area around where you live, would he or she be caught by the police? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a kid used marijuana (pot, weed, dab, wax, edible) in your neighborhood, or the area around where you live, would he or she be caught by the police? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a kid was found carrying a gun in your neighborhood, or the area around where you live, would he or she be caught by the police? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Q33 Your Thoughts and Behaviors

The next set of questions asks about bullying. Bullying is when 1 or more students tease, threaten, spread rumors about, hit, shove, or hurt another student over and over again. It is not bullying when 2 students of about the same strength or power argue or fight or tease each other in a friendly way.

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Q34 How many times in the past 3 months have YOU done the following action:

	Never (1)	1-2 (2)	3-5 (3)	6-9 (4)	10-19 (5)	20-29 (6)	30-39 (7)	40 or more (8)
Spread mean rumors or lies about other kids at school? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Posted something online or sent a text that might embarrass or hurt another student? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Made fun of other people? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hit, shoved or pushed another student and was not just fooling around? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q32 How many times in the past 3 months has SOMEONE ELSE done the following action TO YOU:

	Never (1)	1-2 (2)	3-5 (3)	6-9 (4)	10-19 (5)	20-29 (6)	30-39 (7)	40 or more (8)
Spread mean rumors or lies about you at school? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Posted something online or sent a text that embarrassed or hurt you? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Made fun of you? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hit, shoved or pushed you and was not just fooling around? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q34 During the past 12 months, how many times

	0 times (1)	1 time (2)	2 or 3 (3)	4 or 5 (4)	6 or 7 (5)	8 or 9 (6)	10 or 11 (7)	12 or more (8)
Were you in a physical fight? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Were you in a physical fight in which you were injured and had to be treated by a doctor or nurse? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has someone threatened or injured you with a weapon such as a gun, knife, or club on school property? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q35 The following sentences ask about your feelings about yourself. Please answer strongly disagree if you really don't agree with the sentence, disagree if you sort of disagree, agree if you sort of agree, and strongly agree if you really agree with the sentence.

	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
I ignore rules that get in my way. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do the opposite of what people tell me, just to get them mad. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think sometimes it is okay to cheat at school. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know where to go in my community to get help. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel optimistic about my future. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I handle stress in a healthy way. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have adults in my life I turn to when things feel overwhelming. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q37 In the last 30 days how often:

	Never (1)	Not very often (2)	Sometimes (3)	Often (4)	Always (5)
were you very sad? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
were you grouchy or irritable, or in a bad mood? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
did you feel hopeless about the future? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
did you feel like not eating or eating more than usual? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
did you sleep a lot more or a lot less than usual? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
did you have difficulty concentrating on your school work? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q38 During the past 12 months, did you ever seriously consider attempting suicide?

- ☐ No (1)
- ☐ Yes (2)

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Display This Question:

If During the past 12 months, did you ever seriously consider attempting suicide? = Yes

Q168 If you are thinking about suicide or are worried about a friend or loved one, please call the National Suicide Prevention Lifeline at 1-800-273-8255 or you can TEXT “MOSAFE” to 741-741 to chat with a trained Crisis Counselor 24/7.

For immediate help, call 911.

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Q39 During the past 12 months, did you make a plan about how you would attempt suicide?

- ☐ No (1)
- ☐ Yes (2)

---

Q40 During the past 12 months, how many times did you actually attempt suicide?

- ☐ 0 times (1)
- ☐ 1 time (2)
- ☐ 2 or 3 times (3)
- ☐ 4 or 5 times (4)
- ☐ 6 or more times (5)

---

Skip To: Q42 If During the past 12 months, how many times did you actually attempt suicide? = 0 times

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Q41 If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?

- ☐ No (1)
- ☐ Yes (2)

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Q42 Have you ever harmed yourself on purpose in a way that was deliberate but not intended as a way to take your life?

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q45 If Have you ever harmed yourself on purpose in a way that was deliberate but not intended as a way t... = No

Q43 What did you do? (check all that apply)

- ☐ Cut, bit, scratched or hit myself on purpose to hurt myself (1)
- ☐ Swallowed more medicine than a doctor told me to take to hurt myself (2)
- ☐ Used drugs or alcohol to hurt myself (3)
- ☐ Swallowed something on purpose that was not food, drink or medicine in order to hurt myself (4)
- ☐ Burned myself (5)
- ☐ Pulled my hair or eyelashes (6)
- ☐ Punched a hard object (like a wall or door) (8)
- ☐ Other (please specify) (7) \_\_\_\_\_

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Page Break

#### Q45 Your Beliefs about Cigarettes, Alcohol, and Other Drugs

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Q44 These questions are about how available certain things are to you.

	Very easy (1)	Sort of easy (2)	Sort of hard (3)	Very hard (4)
If you wanted to get cigarettes, how easy would it be for you to get some? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If you wanted to get e-cigarettes, mods, or vapes, how easy would it be for you to get some? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If you wanted to get alcohol (beer, wine, brandy, and mixed drinks), how easy would it be for you to get some? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If you wanted to get some marijuana (pot, weed, dab, wax, edibles), how easy would it be for you to get some? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q171 These questions are also about how available certain things are to you, continuing the question above.

	Very easy (1)	Sort of easy (2)	Sort of hard (3)	Very hard (4)
If you wanted to get any other illegal drugs such as cocaine, LSD (acid), methamphetamine (meth.), or club drugs (molly, ecstasy, roofies), how easy would it be for you to get some? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If you wanted to get over the counter drugs (Tylenol Cough, Dayquil, Benadryl, etc) when you were not sick, how easy would it be for you to get some? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If you wanted to get prescription drugs that were not prescribed to you by a doctor, how easy would it be for you to get some? (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If you wanted to get synthetic drugs (such as K2, bath salts, plant food, Spice), how easy would it be for you to get some? (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q46 How “cool” do you think your peers believe someone your age would be if they

	Very cool (1)	Pretty cool (2)	A little cool (3)	Not at all cool (4)
smoked cigarettes? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used e-cigs, mods, or vapes? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drank alcohol? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used marijuana (pot, weed, dabs, wax, edibles)? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q47 How much do you think people risk harming themselves (physically or in other ways) if they

	No risk at all (1)	Slight risk (2)	Moderate risk (3)	Great risk (4)
drink alcohol? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
take one or two drinks of an alcoholic beverage nearly every day? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
have five or more drinks of an alcoholic beverage once or twice a week? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
smoke one or more packs of tobacco cigarettes per day? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used e-cigs, mods, or vapes? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used marijuana (pot, weed, dabs, wax, edibles) once or twice a week? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q172 This question is continued from above. How much do you think people risk harming themselves (physically or in other ways) if they

	No risk at all (1)	Slight risk (2)	Moderate risk (3)	Great risk (4)
use any other illegal drugs such as cocaine, LSD (acid), methamphetamine (meth.), or club drugs (molly, ecstasy, roofies)? (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use synthetic drugs (K2, bath salts, plant food, Spice)? (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use cold/cough Medicines (Coricidin Cough, Sudafed, TheraFlu, Tylenol Cough) or other over-the-counter medicines to get high? (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use prescription drugs that are not prescribed to them? (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q48 How do you feel about someone your age having one or two drinks of an alcoholic beverage nearly every day?

- ☐ Neither Approve Nor Disapprove (1)
  - ☐ Somewhat Disapprove (2)
  - ☐ Strongly Disapprove (3)
  - ☐ Don't Know/ Can't Say (4)
- 

Q49 How wrong do you feel it would be for you to

	Not wrong at all (1)	A little bit wrong (2)	Wrong (3)	Very wrong (4)
smoke tobacco cigarettes? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use e-cigarettes or vape? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
drink any type of alcohol? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
take one or two drinks of an alcoholic beverage nearly every day? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
have five or more drinks of an alcoholic beverage once or twice a week? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
smoke marijuana (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use marijuana (pot, weed, dabs, wax, edibles)? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use marijuana (pot, weed, dabs, wax, edibles) once or twice a week? (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q173 How wrong do you feel it would be for you to

	Not wrong at all (1)	A little bit wrong (2)	Wrong (3)	Very wrong (4)
use any other illegal drugs such as cocaine, LSD (acid), methamphetamine (meth.), or club drugs (molly, ecstasy, roofies)? (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use cold/cough Medicines (Coricidin Cough, Sudafed, TheraFlu, Tylenol Cough) or other over-the-counter medicines to get high? (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use prescription drugs that have not been prescribed to you by a doctor? (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q179 Check the reason(s) that motivate you or can motivate you to not use alcohol or other drugs

- ☐ For health (1)
- ☐ To perform best in sports, art, or school (2)
- ☐ To be a positive role model (3)
- ☐ To be there for my friends (4)
- ☐ To make my parents/ guardians proud (5)
- ☐ To make my teacher(s)/coach(es) proud (6)
- ☐ To follow the law (7)
- ☐ To protect my reputation (8)
- ☐ Other (please specify) (9) \_\_\_\_\_

Q180 People use drugs and alcohol for various reasons, including the reasons displayed below. For the drugs or alcohol use, check the reasons that were important to you for using them. (check all that apply)

- ☐ To help with stress reduction (1)
- ☐ To help me sleep (2)
- ☐ To help me feel better or happier (3)
- ☐ To increase my energy (4)
- ☐ To help with weight loss (5)
- ☐ To fit in with friends (6)
- ☐ To have a good time (7)
- ☐ To reduce and/or manage physical pain (8)
- ☐ To reduce and/or manage emotional pain (9)
- ☐ To improve academic performance (10)
- ☐ Curiosity (11)
- ☐ Other (please specify) (12) \_\_\_\_\_

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### Q50 Cigarettes, Alcohol, and Other Drugs

These next questions are about your use of tobacco, alcohol, and other drugs. Remember your answers are completely anonymous.

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### Q51 CIGARETTES.

---

Q53 Have you ever smoked part or all of a cigarette?

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q57 If Have you ever smoked part or all of a cigarette? = No

---

Q117 How do you get your cigarettes? (check all that apply)

- ☐ A family member gives or sells them to me (1)
  - ☐ A friend gives or sells them to me (2)
  - ☐ I buy them from the store (3)
  - ☐ I ask a stranger to buy them for me (4)
  - ☐ I take them without permission (5)
  - ☐ Buy them online (6)
  - ☐ Other (please specify) (7) \_\_\_\_\_
-

Q54 How old were you the first time you smoked part or all of a cigarette?

- ☐ 8 or younger (1)
  - ☐ 9 (2)
  - ☐ 10 (3)
  - ☐ 11 (4)
  - ☐ 12 (5)
  - ☐ 13 (6)
  - ☐ 14 (7)
  - ☐ 15 (8)
  - ☐ 16 (9)
  - ☐ 17 (10)
  - ☐ 18 (11)
  - ☐ 19 or older (12)
- 

Q55 What is your best estimate of the number of days you smoked part or all of a cigarette during the past 30 days?

- ☐ 0 days (1)
- ☐ 1 or 2 days (2)
- ☐ 3 to 5 days (3)
- ☐ 6 to 9 days (4)
- ☐ 10 to 19 days (5)
- ☐ 20 to 29 days (6)
- ☐ All 30 days (7)

Skip To: Q57 If What is your best estimate of the number of days you smoked part or all of a cigarette during the... = 0 days

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Q54 Have you ever tried to quit smoking cigarettes?

- ☐ Yes and I quit (1)
  - ☐ Yes, but I still smoke (2)
  - ☐ No, I never tried (3)
- 

Q55 On the day or days you smoked cigarettes during the past 30 days, how many cigarettes did you smoke per day, on average?

- ☐ Part of one cigarette per day (1)
  - ☐ 1 cigarette per day (2)
  - ☐ 2 to 5 cigarettes per day (3)
  - ☐ 6 to 15 cigarettes per day (about 1/2 pack) (4)
  - ☐ 16 to 25 cigarettes per day (about 1 pack) (5)
  - ☐ 26 to 35 cigarettes per day (about 1 1/2 packs) (6)
  - ☐ More than 35 cigarettes per day (about 2 packs or more) (7)
- 

Q56 What is your best estimate of the number of days you smoked part or all of a cigarette on school property during the past 30 days?

- ☐ 0 days (1)
  - ☐ 1 or 2 days (2)
  - ☐ 3 to 5 days (3)
  - ☐ 6 to 9 days (4)
  - ☐ 10 to 19 days (5)
  - ☐ 20 to 29 days (6)
  - ☐ All 30 days (7)
- 

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**Q57 CHEWING TOBACCO.** These next questions are about your use of chewing tobacco and snuff, sometimes called dip.

---

Q58 Have you ever used chewing tobacco such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, or Copenhagen or snuff (dip), even once?

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q60 If Have you ever used chewing tobacco such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits,... = No

---

Q59 What is your best estimate of the number of days you used chewing tobacco or snuff during the past 30 days?

- ☐ 0 days (1)
  - ☐ 1 or 2 days (2)
  - ☐ 3 to 5 days (3)
  - ☐ 6 to 9 days (4)
  - ☐ 10 to 19 days (5)
  - ☐ 20-29 days (6)
  - ☐ All 30 days (7)
- 

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**Q60 ELECTRONIC CIGARETTES (E-CIGS, MODS, or VAPES).** These next questions are about your use of e-cigs, mods, or vapes.

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Q61 Have you ever used e-cigarettes, mods, or vapes even once?

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q63 If Have you ever used e-cigarettes, mods, or vapes even once? = No

---

Q181 How old were you the first time you used e-cigarette or vape?

- ☐ 8 or younger (1)
  - ☐ 9 (2)
  - ☐ 10 (3)
  - ☐ 11 (4)
  - ☐ 12 (5)
  - ☐ 13 (6)
  - ☐ 14 (7)
  - ☐ 15 (8)
  - ☐ 16 (9)
  - ☐ 17 (10)
  - ☐ 18 (11)
  - ☐ 19 or older (12)
-

Q62 What is your best estimate of the number of days you used e-cigarettes, mods or vapes during the past 30 days?

- ☐ 0 days (1)
  - ☐ 1 or 2 days (2)
  - ☐ 3 to 5 days (3)
  - ☐ 6 to 9 days (4)
  - ☐ 10 to 19 days (5)
  - ☐ 20-29 days (6)
  - ☐ All 30 days (7)
- 

Q118 How do you get the products to put in your e-cigarette, mod or vape? (check all that apply)

- ☐ A family member gives or sells them to me (1)
  - ☐ A friend gives or sells them to me (2)
  - ☐ I buy them from the store (3)
  - ☐ I ask a stranger to buy them for me (4)
  - ☐ I take them without permission (5)
  - ☐ Buy them online (6)
  - ☐ Other (please specify) (7) \_\_\_\_\_
- 

Q64 What do you use in your e-cigarette, mod, or vape? (check all that apply)

- ☐ Nicotine (1)
  - ☐ Marijuana (pot, weed, dabs, wax) (2)
  - ☐ Flavor only (3)
  - ☐ Other (please specify) (4) \_\_\_\_\_
- 

Page Break

---

Q63 **HOOKAH.** These next questions are about your use of hookahs or water pipes.

---

Q65 Have you ever used hookahs (water pipes), even once?

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q67 If Have you ever used hookahs (water pipes), even once? = No

---

Q66 What is your best estimate of the number of days you used hookahs (water pipes) during the past 30 days?

- ☐ 0 days (1)
  - ☐ 1 or 2 days (2)
  - ☐ 3 to 5 days (3)
  - ☐ 6 to 9 days (4)
  - ☐ 10 to 19 days (5)
  - ☐ 20-29 days (6)
  - ☐ All 30 days (7)
- 

Page Break

---

Q67 **ALCOHOL.** The next questions are about alcohol, such as beer, wine, brandy, and mixed drinks. We are not asking about times when you only had a sip or two from a drink or drank only for religious purposes.

Throughout these questions, by a "drink", we mean a can or bottle of beer, a glass of wine or a wine cooler, a shot of liquor, or a mixed drink with liquor in it.

---

Q69 During the past 30 days, on how many days did you ride in a car or other vehicle driven by someone who had been drinking alcohol?

- ☐ 0 days (1)
  - ☐ 1 or 2 days (2)
  - ☐ 3 to 5 days (3)
  - ☐ 6 to 9 days (4)
  - ☐ 10 to 19 days (5)
  - ☐ 20-29 days (6)
  - ☐ All 30 days (7)
- 

Q70 Have you ever, even once, had a drink of any type of alcohol? Please do not include times when you only had a sip or two from a drink or if you drank alcohol only for religious purposes.

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q78 If Have you ever, even once, had a drink of any type of alcohol? Please do not include times when yo... = No

---

Q71 Think about the first time you had a drink of alcohol. How old were you the first time you had a drink of an alcoholic beverage? Please do not include any time when you only had a sip or two from a drink.

- ☐ 8 or younger (1)
  - ☐ 9 (2)
  - ☐ 10 (3)
  - ☐ 11 (4)
  - ☐ 12 (5)
  - ☐ 13 (6)
  - ☐ 14 (7)
  - ☐ 15 (8)
  - ☐ 16 (9)
  - ☐ 17 (10)
  - ☐ 18 (11)
  - ☐ 19 or older (12)
- 

Q72 During your life, how many times have you had at least one drink of alcohol?

- ☐ 0 times (1)
  - ☐ 1-2 times (2)
  - ☐ 3-5 times (3)
  - ☐ 6-9 times (4)
  - ☐ 10-19 times (5)
  - ☐ 20-39 times (6)
  - ☐ 40 or more times (7)
-

Q119 How do you get your alcohol? (check all that apply)

- ☐ A family member gives or sells it to me (1)
  - ☐ A friend gives or sells it to me (2)
  - ☐ I buy it from the store / bar / etc. (3)
  - ☐ I ask a stranger to buy it for me (4)
  - ☐ I take it without permission (5)
  - ☐ Buy it online (6)
  - ☐ Other (please specify) (7) \_\_\_\_\_
- 

Q73 What is your best estimate of the number of days you drank alcohol during the past 30 days?

- ☐ 0 days (1)
- ☐ 1 or 2 days (2)
- ☐ 3 to 5 days (3)
- ☐ 6 to 9 days (4)
- ☐ 10 to 19 days (5)
- ☐ 20 to 29 days (6)
- ☐ All 30 days (7)

Skip To: Q78 If What is your best estimate of the number of days you drank alcohol during the past 30 days? = 0 days

---

Page Break

---

Q74 Think back over the last two weeks. How many times have you had five or more alcoholic drinks in a row?

- ☐ None (1)
  - ☐ Once (2)
  - ☐ Twice (3)
  - ☐ 3-5 times (4)
  - ☐ 6-9 times (5)
  - ☐ 10 or more times (6)
- 

Q75 On the days you drink alcohol, about how many drinks do you have on average?

- ☐ Less than one (1)
  - ☐ One (2)
  - ☐ Two (3)
  - ☐ Three (4)
  - ☐ Four (5)
  - ☐ Five (6)
  - ☐ Six or more (7)
- 

Q76 What is your best estimate of the number of days you drank alcohol on school property during the past 30 days?

- ☐ 0 days (1)
  - ☐ 1 or 2 days (2)
  - ☐ 3 to 5 days (3)
  - ☐ 6 to 9 days (4)
  - ☐ 10 to 19 days (5)
  - ☐ 20 to 29 days (6)
  - ☐ All 30 days (7)
-



Q77 During the past 30 days, on how many days did you drive a car or other vehicle when you had been drinking alcohol?

- ☐ 0 days (1)
- ☐ 1 or 2 days (2)
- ☐ 3 to 5 days (3)
- ☐ 6 to 9 days (4)
- ☐ 10 to 19 days (5)
- ☐ 20 to 29 days (6)
- ☐ All 30 days (7)

---

Page Break

Q78 MARIJUANA. The next questions are about marijuana (weed, grass, pot, dabs, wax, or edibles).

---

Q80 Have you ever, even once, used a form of marijuana?

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q85 If Have you ever, even once, used a form of marijuana? = No

---

Q81 How old were you the first time you used marijuana?

- ☐ 8 or younger (1)
  - ☐ 9 (2)
  - ☐ 10 (3)
  - ☐ 11 (4)
  - ☐ 12 (5)
  - ☐ 13 (6)
  - ☐ 14 (7)
  - ☐ 15 (8)
  - ☐ 16 (9)
  - ☐ 17 (10)
  - ☐ 18 (11)
  - ☐ 19 or older (12)
-

Q120 How do you get your marijuana? (check all that apply)

- ☐ A family member gives or sells it to me (1)
  - ☐ A friend gives or sells it to me (2)
  - ☐ I buy it from a dealer (3)
  - ☐ A stranger gives or sells it to me (4)
  - ☐ I take it without permission (5)
  - ☐ Buy it online (6)
  - ☐ Other (please specify) (7) \_\_\_\_\_
- 

Q82 What is your best estimate of the number of days you used marijuana during the past 30 days?

- ☐ 0 days (1)
- ☐ 1 or 2 days (2)
- ☐ 3 to 5 days (3)
- ☐ 6 to 9 days (4)
- ☐ 10 to 19 days (5)
- ☐ 20 to 29 days (6)
- ☐ All 30 days (7)

Skip To: Q85 If What is your best estimate of the number of days you used marijuana during the past 30 days? = 0 days

---

Q83 What is your best estimate of the number of days you used marijuana on school property during the past 30 days?

- ☐ 0 days (1)
- ☐ 1 or 2 days (2)
- ☐ 3 to 5 days (3)
- ☐ 6 to 9 days (4)
- ☐ 10 to 19 days (5)
- ☐ 20 to 29 days (6)
- ☐ All 30 days (7)

---

Q84 How do you use Marijuana? (check all that apply)

- ☐ Smoke it (blunt, pipe, joint, bong, water pipe, hookah, etc.) (1)
- ☐ Vape it (dry plant material, THC oil, CBD oil, or other extracts, etc.) (2)
- ☐ Eat it (Edibles) (3)
- ☐ Dabbing (wax, butter, hash oil, etc.) (4)
- ☐ Other (please specify) (5) \_\_\_\_\_

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Page Break

**Q85 INHALANTS.** The next questions are about inhalants, which are liquids, sprays, and gases that some people sniff or inhale. Inhalants include things like gas in aerosol cans, whippets, gasoline, white out, glue, and marking pens.

---

**Q86** Have you ever, even once, used inhalants?

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q89 If Have you ever, even once, used inhalants? = No

---

**Q87** How old were you the first time you used inhalants?

- ☐ 8 or younger (1)
  - ☐ 10 (2)
  - ☐ 11 (3)
  - ☐ 12 (4)
  - ☐ 13 (5)
  - ☐ 14 (6)
  - ☐ 15 (7)
  - ☐ 16 (8)
  - ☐ 17 (9)
  - ☐ 18 (10)
  - ☐ 19 or older (11)
-

Q88 What is your best estimate of the number of days you used inhalants during the past 30 days?

- ☐ 0 days (1)
- ☐ 1 or 2 days (2)
- ☐ 3 to 5 days (3)
- ☐ 6 to 9 days (4)
- ☐ 10 to 19 days (5)
- ☐ 20 to 29 days (6)
- ☐ All 30 days (7)

---

Page Break

**Q89 PRESCRIPTION DRUGS.** The next questions are about prescription drugs (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) taken without a doctor's prescription? (Do not consider marijuana while answering this question)

Q90 Have you ever, even once, used prescription medication that was not prescribed for you by a doctor? (not including "over-the-counter" medications)

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q96 If Have you ever, even once, used prescription medication that was not prescribed for you by a docto... = No

Q91 In the past 12 months, which of the following prescription drugs have you used without a doctor's prescription for your use? (check all that apply)

- ☐ Stimulants (e.g., Dexedrine, Adderall, Ritalin, Concerta) (1)
- ☐ Pain medication (e.g., Vicodin, OxyContin, Tylenol 3 with Codeine, Demerol, morphine) (2)
- ☐ Sedatives/anxiety medication (e.g., Barbiturates, Valium, Librium, Xanax, Ativan, Klonopin) (3)
- ☐ Sleeping medication (e.g., Ambien, Halcion, Restoril) (4)
- ☐ Other (please specify) (5) \_\_\_\_\_

---

Q95 What is your best estimate of the number of days in the past 30 days you used any prescription drugs that was not prescribed for you by a doctor

- ☐ 0 days (1)
- ☐ 1 or 2 days (2)
- ☐ 3 to 5 days (3)
- ☐ 6 to 9 days (4)
- ☐ 10 to 19 days (5)
- ☐ 20 to 29 days (6)
- ☐ All 30 days (7)

Skip To: Q96 If What is your best estimate of the number of days in the past 30 days you used any prescription dr... = 0 days

---

Q92 How do you access your prescription drugs without a doctor's prescription? (check all that apply)

- ☐ A family member gives or sells it to me (1)
  - ☐ A friend gives or sells it to me (2)
  - ☐ A stranger gives or sells it to me (3)
  - ☐ I take it without permission (4)
  - ☐ I buy it online (5)
  - ☐ Other (please specify) (6) \_\_\_\_\_
-

Q93 People use prescription drugs for various reasons, including the reasons displayed below. For any of the drugs you used without a doctor's prescription, check the reasons that were important to you for using them. (check all that apply)

- ☐ To help with stress reduction (1)
  - ☐ To help me sleep (2)
  - ☐ To help me feel better or happier (3)
  - ☐ To increase my energy (4)
  - ☐ To help with weight loss (5)
  - ☐ To fit in with friends (6)
  - ☐ To have a good time (7)
  - ☐ To reduce and/or manage physical pain (8)
  - ☐ To reduce and/or manage emotional pain (11)
  - ☐ To improve academic performance (9)
  - ☐ Curiosity (10)
  - ☐ Other (please specify) (12) \_\_\_\_\_
- 

Q94 How old were you the first time you used prescription drugs that was not prescribed for you by a doctor? (not including "over-the-counter" medications)

- ☐ 8 or younger (1)
  - ☐ 9 (2)
  - ☐ 10 (3)
  - ☐ 11 (4)
  - ☐ 12 (5)
  - ☐ 13 (6)
  - ☐ 14 (7)
  - ☐ 15 (8)
  - ☐ 16 (9)
  - ☐ 17 (10)
  - ☐ 18 (11)
  - ☐ 19 or older (12)
-



Page Break

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**Q96 OVER-THE-COUNTER MEDICATIONS.**

---

Q97 Have you ever, even once, used cold/cough Medicines (Coricidin Cough, Sudafed, TheraFlu, Tylenol Cough) or other over-the-counter medicines to get high?

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q99 If Have you ever, even once, used cold/cough Medicines (Coricidin Cough, Sudafed, TheraFlu, Tylenol... = No

---

Q98 What is your best estimate of the number of days in the past 30 days you used cold/cough Medicines (Coricidin Cough, Sudafed, TheraFlu, Tylenol Cough) or other over-the-counter medicines to get high?

- ☐ 0 days (1)
  - ☐ 1 or 2 days (2)
  - ☐ 3 to 5 days (3)
  - ☐ 6 to 9 days (4)
  - ☐ 10 to 19 days (5)
  - ☐ 20 to 29 days (6)
  - ☐ All 30 days (7)
-

Q115 How old were you the first time you used cold/cough Medicines (Coricidin Cough, Sudafed, TheraFlu, Tylenol Cough) or other over-the-counter medicines to get high?

- ☐ 8 or younger (1)
- ☐ 9 (2)
- ☐ 10 (3)
- ☐ 11 (4)
- ☐ 12 (5)
- ☐ 13 (6)
- ☐ 14 (7)
- ☐ 15 (8)
- ☐ 16 (9)
- ☐ 17 (10)
- ☐ 18 (11)
- ☐ 19 or older (12)

---

Page Break

**Q99 SYNTHETIC DRUGS.**

---

Q100 Have you ever, even once, used a synthetic drug (K2, bath salts, plant food, Spice)?

- ☐ No (1)
- ☐ Yes (2)

Skip To: Q102 If Have you ever, even once, used a synthetic drug (K2, bath salts, plant food, Spice)? = No

---

Q101 What is your best estimate of the number of days in the past 30 days you used synthetic drug?

- ☐ 0 days (1)
  - ☐ 1 or 2 days (2)
  - ☐ 3 to 5 days (3)
  - ☐ 6 to 9 days (4)
  - ☐ 10 to 19 days (5)
  - ☐ 20 to 29 days (6)
  - ☐ All 30 days (7)
- 

Page Break

---

**Q102 OTHER DRUGS.**

---

Q103 Have you ever, even once, used any form of cocaine?

- ☐ No (1)
  - ☐ Yes (2)
- 

Q104 Have you ever, even once, used heroin (also called smack or H)?

- ☐ No (1)
  - ☐ Yes (2)
- 

Q105 Have you ever, even once, used hallucinogens such as LSD (acid), PCP (angel dust), Magic Mushrooms, Mescaline, Peyote, or Psilocybin?

- ☐ No (1)
  - ☐ Yes (2)
- 

Q106 Have you ever, even once, used methamphetamine (known as meth, crank, crystal, or ice)?

- ☐ No (1)
  - ☐ Yes (2)
-

Q107 Have you ever, even once, used Dumolan (also known as "dums" or "dumbos")?

- ☐ No (1)
  - ☐ Yes (2)
- 

Q108 Have you ever, even once, used any type of club drug including MDMA (molly, ecstasy, X, E), GHB (G), Rohypnol (roofie), or Ketamine (Special K)?

- ☐ No (1)
  - ☐ Yes (2)
- 

Page Break

---

### Q109 Your Family

	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
My parents notice when I am doing a good job and let me know about it. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents ask me what I think before most family decisions affecting me are made. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents ask if I have gotten my homework done. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q110

	Not wrong at all (1)	A little bit wrong (2)	Wrong (3)	Very wrong (4)
How wrong do your parents feel it would be for you to smoke tobacco? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How wrong do your parents feel it would be for you to use e-cigarette or vape? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How wrong do your parents feel it would be for you to drink any type of alcohol? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How wrong do your parents feel it would be for you to take one or two drinks of an alcoholic beverage nearly every day? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How wrong do your parents feel it would be for you to use cold/cough Medicines (Coricidin Cough, Sudafed, TheraFlu, Tylenol Cough) or other over-the-counter medicines to get high? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Q174

	Not wrong at all (1)	A little bit wrong (2)	Wrong (3)	Very wrong (4)
How wrong do your parents feel it would be for you to smoke marijuana (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How wrong do your parents feel it would be for you to use marijuana (pot, weed, dabs, wax, edibles)? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How wrong do your parents feel it would be for you to use any form of marijuana (pot, weed, dab wax, edibles) once or twice a week? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How wrong do your parents feel it would be for you to use prescription drugs not prescribed to you? (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Q111 How often do people in your family insult or yell at each other?

- ☐ Never (1)
- ☐ Not very often (2)
- ☐ Some of the time (3)
- ☐ Most of the time (4)
- ☐ All of the time (5)

Q112 **Honesty**

---

Q113 How honest were you in filling out this survey?

- ☐ I was not honest at all (1)
  - ☐ I was honest once in a while (2)
  - ☐ I was honest some of the time (3)
  - ☐ I was honest pretty much all of the time (4)
  - ☐ I was honest all of the time (5)
- 

Q170 Thanks very much for completing this survey!!!

End of Block: Close out

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# Appendix B - 2020 MSS Weighting

## Introduction

The Missouri Student Survey (MSS) has been administered during the 2019-2020 school year by the Missouri Institute of Mental Health (MIMH). The questionnaire asked about students' tobacco, drug, and alcohol use. Topics on bullying, fighting, mental health, suicide, and other information were also covered in the survey. In addition, thoughts, feelings, and opinions about themselves, schools, and friends were surveyed.

The MSS target survey population was students in grades 6 through 12 enrolled in regular public and charter schools. Special education buildings, juvenile justice centers, alternative schools, and Missouri Schools for the Blind and Deaf were excluded. Schools with less than 60 students in grades 6 through 12 were also excluded. The sampling frame contained 1290 schools with 472,693 students enrolled in grades 6 through 12.

The MSS was a two-stage cluster sample, with schools selected in the first sampling stage and classrooms sampled in the second stage. All students in the sampled classrooms were asked to participate. To ensure good geographic representation, the sampling frame was sorted by 6-digit county district codes prior to sampling of schools. A total of 96 schools consisting of 48 high schools and 48 middle schools were selected systematically with probability proportional to size (enrollment in grades 6 through 12) using a random start. From each school, approximately 60 students (3-5 classes) were selected. All classes meeting during a particular period of the day or all classes in a required subject, depending on the school, were included in the class list. Systematic equal probability sampling with a random start was used to select classes from each school that participated in the survey. Classes were selected based on randomly generated numbers provided by MIMH.

## Response Rates

For the two-stage sample, the overall response rate was computed as the product of school response rate and student response rate. The response rates were computed as

$$\text{School response rate} = \frac{\text{number of eligible participating schools}}{\text{number of eligible sampled schools}}$$

$$\text{Student response rate} = \frac{\text{number of eligible participating students}}{\text{number of eligible sampled students in participating schools}}$$

Of the 96 sampled schools, 45 schools participated, or a school response rate of 47%. A total of 2,324 students participated. However, the actual number of eligible sampled students was not known for some of the participating schools for one of the two following reasons: (1) some schools surveyed more classes that were

originally planned, resulting in the number of completed surveys greater than the required number of eligible sampled students; (2) some schools failed to use all eligible classes for sampling. As a result, some students (those not on the class list) should have been sampled but did not have a chance of selection.

To correct the selection bias to the extent possible, two types of estimation were made to the number of eligible sampled students for calculating student response rate and for weighting:

1. For schools where the number of completed surveys was greater than the originally planned number of sampled students, the number of sampled students was estimated. The average student response rate for the remaining schools (0.77) was used to estimate the number of sampled students as follows:

$$\text{Estimated number of sampled students} = \frac{\text{number of completed surveys}}{\text{average student response rate}}$$

2. For schools that sampled from incomplete class lists, the number of students who were not included on the class lists was estimated. A within-school sampling interval of 60 students (based on the average number of sampled students from schools that used complete class lists) was applied to the estimated number of students missing from the class lists.

The number of sampled students (some were estimated), number of completed surveys, and student response rate by participating school are shown in Appendix A. The total number of sampled students (some were estimated) was 3,020, resulting in a student response rate of  $2,324/3,020 = 76\%$ . The overall response rate for the MSS was 38%.

## Weighting

A weight was associated with each questionnaire to reflect the likelihood of sampling each student and to reduce bias by compensating for differing patterns of nonresponse. The weight used for estimation was given by:

$$W = W1 * W2 * f1 * f2 * f3$$

W1 = the inverse of the probability of selecting the school;

W2 = the inverse of the probability of selecting the classroom within the school;

- f1 = a school-level nonresponse adjustment factor calculated by school level (middle school, high school), school size category (small, medium, large). The factor was calculated in terms of school enrollment instead of number of schools;
- f2 = a student-level nonresponse adjustment factor calculated by school;
- f3 = a post-stratification adjustment factor calculated by gender within grade and by race/ethnicity.

The sum of final weights for the 2,324 respondents was 416,692, representing the number of students in grades 6 through 12 in regular public and charter schools in Missouri.

Each component of the analysis weight,  $W$  is described in the following sections.

### **School Base Weight (W1)**

Schools were selected with probability proportional to size, with size defined as school enrollment in grades 6 through 12. A base weight was calculated for each school as

$$W1 = \frac{\text{Total grades 6 through 12 enrollment in the sampling frame}}{n * \text{grades 6 through 12 enrollment in the school}}$$

where  $n$  is the number of schools required in the sample = 96; total grades 6 through 12 enrollment in the sampling frame = 472,693. The school base weights are shown in Appendix B.

### **Within-School Base Weight (W2)**

For participating schools, the within school base weight was computed as

$$W2 = \frac{\text{grades 6 through 12 enrollment in the school}}{\text{number of eligible sampled students}}$$

The student base weights are provided in Appendix B.

### **Weighting Adjustments**

Adjustments were made to the initial weights to remove bias from the estimates and reduce the variability of the estimate. The weighting process for the MSS involved three adjustments to the base weights. Two adjustments were made to account for nonresponse in the sample and one adjustment was made to align the weighted sample estimates to known population characteristics that could affect responses to survey questions. Each of these adjustments is summarized below.

### **School-Level Nonresponse Adjustment Factor (f1)**

The first adjustment was made at the school level to account for nonparticipating schools that were sampled. To adjust for school nonresponse, each sampled school was assigned to one of six adjustment cells, based on school setting (middle school, high school) and school size derived from enrollment in the target grades, the schools with less than 151 total enrollment were assigned to small, between 150 to 300 total enrollment were assigned to medium, and greater than 300 total enrollment were assigned to large. Within each adjustment cell, weights of refusing schools were distributed to the participating schools.

For each cell, a school-level nonresponse adjustment was calculated as

$$\text{School adjustment factor} = \frac{\sum_{\text{sampled schools}} \text{school base weight} * \text{school enrollment}}{\sum_{\text{participating schools}} \text{school base weight} * \text{school enrollment}}$$

There were three cells, two middle schools and one high school, had high adjustment factors (greater than 2) to collapse with other middle school and high school cells for calculating the final adjustments. Table 1 presents the school adjustment factors for middle and high schools.

Table 1. School adjustment factor

School adjustment cell	School level	Size category	Number of responding schools	School adjustment factor
1	Middle school	Large	9	2
2	Middle school	Medium	1	2
3	Middle school	Small	10	2
4	High school	Large	20	1.75
5	High school	Medium	4	1.99
6	High school	Small	1	1.99

### Student-Level Nonresponse Adjustment Factor (f2)

The second adjustment was made at the student-level that accounted for eligible students enrolled in sampled classes who failed to complete a questionnaire (e.g., students who were absent on the day the survey was administered, students who did not receive parental permission, students who refused to participate, or questionnaires that failed the edit and quality control checks). Weights of these nonresponding students were given to responding students in the same school.

Adjustment cells for the student-level adjustment were defined by school. Cells with low frequencies (less than 15 students) or very high adjustment factors (greater than 2.5) were collapsed with other cells in the same school level and school size category.

Within each adjustment cell, a student nonresponse adjustment factor was computed as

$$\text{Student adjustment factor} = \frac{\sum_{\text{eligible sampled students}} \text{student weight}}{\sum_{\text{completed surveys}} \text{student weight}}$$

where student weight = School base weight \* School adjustment factor \* Within-school base weight  
= W1 \* f1 \* W2.

A total of 43 cells were formed. The student adjustment cells and the adjustment factors are shown in Appendix C. Cells with more than one school indicated that schools were collapsed for student nonresponse adjustment so that the resulting adjustment factor was less than 2.5. Student adjustment factors ranged from 1.01 to 2.42.

### Post-stratification (f3)

The final weighting step adjusted the nonresponse-adjusted weights so that weighted sample totals aligned with known population totals for variables that could affect response to survey questions. Raking ratio estimation, also known as iterative post-stratification or raking was used to adjust the weights to population totals. For the MSS, population enrollment totals were created by grade and gender as well as by race/ethnicity. The population enrollment totals for grade by gender and the computation of the post-stratification weight are shown in Table 2. Each responding sampled student was also assigned to an adjustment cell based on the grade and gender reported in the questionnaire as shown in Table 2.

Table 2. Population enrollment and total sample for grade by gender and the weight computation

Grade & Gender	Population	$P = \frac{\text{Population}}{\text{Population Total}}$	Sample	$S = \frac{\text{Sample}}{\text{Sample Total}}$	Weight P/S
6 <sup>th</sup> Male	32,174	0.07	333	0.14	0.49
6 <sup>th</sup> Female	30,205	0.07	337	0.15	0.48
7 <sup>th</sup> Male	32,548	0.07	176	0.08	0.92
7 <sup>th</sup> Female	31,523	0.07	164	0.07	0.99
8 <sup>th</sup> Male	33,337	0.07	169	0.07	0.96
8 <sup>th</sup> Female	31,032	0.07	149	0.06	1.09
9 <sup>th</sup> Male	34,854	0.08	167	0.07	1.11
9 <sup>th</sup> Female	32,924	0.07	180	0.08	0.90
10 <sup>th</sup> Male	33,778	0.08	170	0.07	1.09
10 <sup>th</sup> Female	32,002	0.07	178	0.08	0.91
11 <sup>th</sup> Male	31,514	0.07	104	0.04	1.56
11 <sup>th</sup> Female	30,614	0.07	96	0.04	1.69
12 <sup>th</sup> Male	30,796	0.07	46	0.02	3.52
12 <sup>th</sup> Female	29,830	0.07	45	0.02	3.60
<b>Total</b>	<b>447,131</b>		<b>2,314</b>		

“Other” race-ethnicity included Hispanic/Latino, American Indian/Alaska Native, Asian, Native Hawaiian/other Pacific Islander, multiple-Hispanic, and multiple-non-Hispanic. The population enrollment and sample totals for race/ethnicity and the computation of the post-stratification weight are shown in Table 3. Multiplication of post-stratification weight of Gender and race/ethnicity was determined the final post-stratification weight for the sample.

Table 3. Population enrollment and total sample for race/ethnicity and the weight computation

Race-Ethnicity	Population	$P = \frac{\text{Population}}{\text{Population Total}}$	Sample	$S = \frac{\text{Sample}}{\text{Sample Total}}$	Weight P/S
Non-Hispanic White	348,281	0.77	1523	0.67	1.15
Non-Hispanic Black	72,952	0.16	263	0.12	1.38
Other	25,897	0.05	484	0.21	0.23
Total	447,130		2,270		

Occasionally, a completed questionnaire might have missing responses for the items used in raking. For raking purposes, missing responses for grade, gender, and race/ethnicity were imputed so that all responding sampled students could be assigned to an appropriate adjustment cell. Hot-deck imputation was used, where students with missing items (recipients) were filled in with reported items from other students (donors). Donors and recipients were grouped into imputation cells that were similar in some auxiliary variables (boundary variables). Within each imputation cell, donors and recipients were matched randomly.

Missing grade was imputed within school based on the age of the student. For imputing gender and race/ethnicity, boundary variables were chosen such that they were highly significantly related to the imputed variable of interest, based on Chi-Square analysis, and had relatively small number of missing values. For gender, the following boundary variables were selected:

- Q37\_1 (In the past 30 days how often were you very sad?)
- Q34\_1\_0 (During the past 12 months, how many times were you in a physical fight?)
- Q58 (Have you ever used chewing tobacco such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, or Copenhagen or snuff (dip), even once?)

The following boundary variables were used to form imputation cells for race/ethnicity imputation:

- Q7 (What is the language you speak most often at home?)
- Q34\_1\_0 (During the past 12 months, how many times were you in a physical fight?)
- Q16 (What were your average grades last school year?)

The Chi-Square test statistic and p-value for the boundary variables are shown in Table 4.

Table 4. Significance of boundary variables

Variable	Used for imputing	Chi-Square statistic	Degrees of freedom	p-value
Q37_1	Gender	190.00	4	<.0001
Q34_1_0	Gender	59.70	7	<.0001
Q58	Gender	19.41	1	<.0001
Q7	Race/ethnicity	615.86	6	<.0001
Q34_1_0	Race/ethnicity	44.87	21	<.01
Q16	Race/ethnicity	42.28	12	<.0001



The boundary variables had missing values in themselves. They were imputed first in a sequential manner. For example, for imputing gender using Q37\_1, Q34\_1\_0, and Q58, missing values for Q37\_1 were imputed using Q34\_1\_0 and Q58. Once Q37\_1 was imputed, Q34\_1\_0 was then imputed using the complete Q37\_1 data and Q58. Following the imputation of Q34\_1\_0, Q58 was imputed using the complete Q37\_1 and Q34\_1\_0 data. After all three boundary variables had been imputed, gender was imputed using the complete Q37\_1, Q34\_1\_0, and Q58 responses.

For the MSS, the imputed values were used for weighting only. Values of these imputed variables were not included in the delivery data file.